XV.

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THE WESTERN JOURNAL,

OF

AGRICULTURE, MANUFACTURES, MECHANIC ARTS, INTERNAL IMPROVEMENT, COMMERCE,

AND

GENERAL LITERATURE.

Agriculture and the Mechanic Arts are the basis of Civilization.

M. TARVER & T. F. RISK,
EDITORS AND PROPRIETORS.

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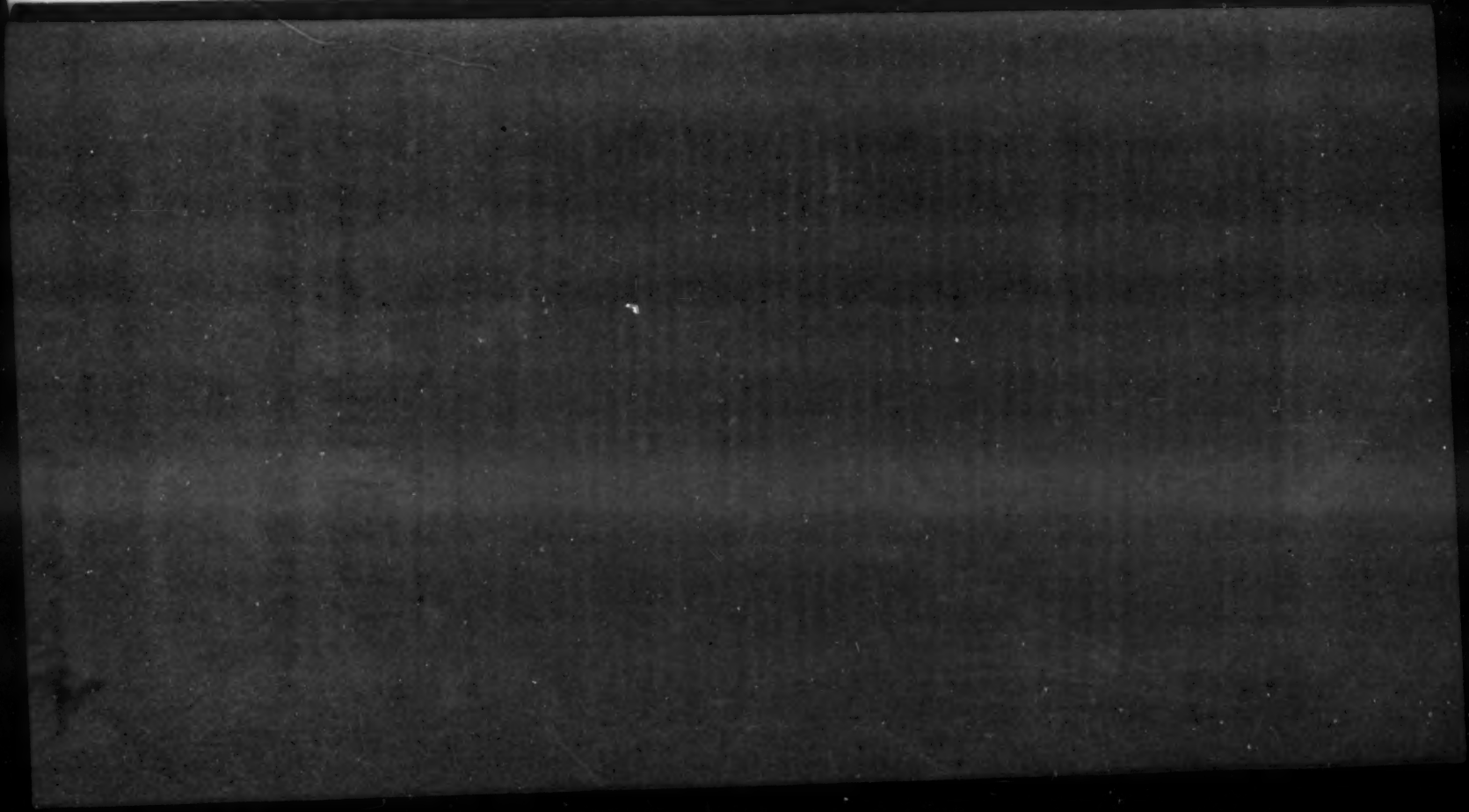

THE

WESTERN JOURNAL.

M. TARVER and T. F. RISK, Editors and Proprietors.

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TABLE OF CONTENTS.

ARTICLES.

I. INCREASE IN THE QUANTITY OF GOLD—ITS EFFECTS.—The relations between the physical and moral world considered; discovery of gold in California; gold considered as a metalic substance; considered as money; general laws governing the circulation of money; causes modifying these laws; amount of money in the United States; amount in the world; amount of bank paper in circulation in the U. States; amount of paper circulation in Massachusetts and Rhode Island; manufacturing districts require more money than agricultural districts; the quantity of money required in a community depends upon the number and amount of exchanges required to be made, and of exchangeable commodities; effects of an increase of gold in the United States considered; Mr. Benton's views respecting the disposition of the gold lands in California considered; effects of gold mining upon the wealth and morals of nations considered; reasons why Spain did not profit by her gold mines; a large increase of gold is calculated to stimulate the production of useful commodities, enlarge the wealth of the country, and to extend commerce and civilization.....By the SENIOR EDITOR, 141

II. COMMERCE OF THE EAST.—Objection as to snows answered; direct benefits of a railway—1. The employment it will give. 2. Increase of commercial facilities. 3. Value of lands. 4. Repairs, &c. 5. Increase of interior trade. 6. Increase of civilization. 7. New lands made productive. 8. Diversity of pursuits and products. 9. Bind us to California. 10. Bring out minerals of the mountains. 11. Pastoral regions. 12. Saving in ships. 13. Amounts paid by whaling ships. 14. Outlet for the valley of the Mississippi. 15. Description of all the countries of Eastern Asia. 16. This road will give impulse to others. Historical account of a canal across Egypt, and modern projects of Mohammed Ali; invasion of it by Napoleon; description of route to India now in use through Egypt; some account of the currents, trade-winds, and monsoons of the Indian Seas; canal across the Isthmus of Tehuantepec; comparison of advantages of the routes through Egypt, through the Isthmus, and across our continent; political errors; moral effects of opening a new route to China.

By J. LOUGHBOROUGH, Esq., of Missouri, 148

III. EDUCATION, NO. I.—Introduction to the subject; it is the duty of the friends of education to do more than simply approve—it is their duty to be active in the cause of education; the kind of knowledge necessary for a teacher to possess considered; the nature and effects of mental and physical exercise; the occupation of teachers should be raised to a rank equal to the learned professions; Normal schools; stricture upon the school books of the present day; these books are too didactic, and are therefore calculated to weary the mind of the child, and give him a distaste for his lesson.

By JOSEPH ORMROD, of Missouri, 162

EDUCATION, No. II.—Education defined; moral and mental cultivation should proceed together; a mere apprenticeship is not a good education; a good education defined.....IBID, 168

IV. RELATIVE VALUE OF STONE COAL AND CORD WOOD.—Estimates of the relative value of stone coal and cord wood as fuel for steamboats, by Professor Walter

R. Johnson, of Washington City; result of experiments made by John Carlisle, commander of the steamboat Marshal Ney, in the use of Cannelton coal as fuel, during a trip from Louisville to New Orleans.....From H. Smith, Esq., of Kentucky, 175

V. BUILDING AND BUILDING MATERIALS.—Making and burning brick; mortar for laying brick; laying the brick in the walls; building jams and chimneys; contracts for buildings; custom in regard to measuring work; the carpenters' work; pitch of roof; advantgaes of low roofs; power of wind on buildings, &c..By B. A. Alderson, of Mo. 178

VI. AGRICULTURAL.—The cultivation of Sumach; its uses; the quantity consumed in the United States; whence imported; quantity grown in the United States; mode of culture; the price; quantity imported into Great Britain; its importance as an article of commerce; its growth will add to the wealth of the country; laws governing the importation of commodities into this country.....By Geo. B. Davidson, of Illinois, 181

HORTICULTURAL.

LIBERAL PREMIUM TO WINE GROWERS.—Premium for the best specimen of Missouri wine grown in the years 1849, 1850 and 1851.....By Alex. Kayser, Esq., of Mo., 184

GRAPE CULTURE IN INDIANA.—Number of acres planted in vineyards; varieties cultivated; average quantity of wine produced per acre; price of the wine; mode of cultivating, training, &c.; treatment of the must; method of grafting the vine, &c..... 186

TEA CULTURE IN THE UNITED STATES.—Experiment of Junius Smith, of Greenville, South Carolina..... 186

CULTIVATION OF STRAWBERRIES.—Mode of culture, estimates of profits, &c..... 187

COMMERCIAL LAW CASES.

HYDE & OGLESBY vs. STEAMER YAZOO, et. al.—Privileged creditors of steamboats; advances made to a captain or owner of a vessel in her home port, even though the money be applied to the payment of privileged claims, gives no privilege to the lender..... 188

RAILROAD TO THE PACIFIC.

SENATOR BENTON'S BILL..... 189

COMMERCIAL STATISTICS.

STATISTICAL ASSOCIATIONS.—Their importance; reasons for establishing such an association in St. Louis; statistics of commercial papers; entitled to little confidence. By the Senior Editor, 195

COINAGE OF THE UNITED STATES.—Amount of coinage of the United States in the several denominations of coin, from the commencement of its operations until December 31st, 1847, inclusive..... 198

QUANTITY OF GOLD AND SILVER produced in the different countries; the quantity produced in America since its discovery..... 201

STATEMENT OF THE ANNUAL AMOUNT of the deposits of gold, for coinage, at the Mint of the United States and its branches, from mines in the United States..... 202

COINAGE OF THE BRITISH MINT.—Table showing the average yearly coinage of the principal governments of Europe and America..... 203

BRITISH COIN AND BULLION STATISTICS.—Exports of bullion from Great Britain, from 1837 to 1847, inclusive, to what countries exported..... 203

QUANTITY OF SPECIE IN THE WORLD..... 204

BANK OF THE STATE OF MISSOURI.—Statement for the year 1848..... 205

WESTERN TOWNS.

LEXINGTON, MISSOURI.—Improvements and business statistics for 1848..... 206

GLASGOW, MISSOURI.—Statistics of its growth and commerce..... 208

ST. LOUIS.—Population; number of boats built in 1848..... 209

IMPORTANT INVENTIONS AND DISCOVERIES.

NEW METHOD OF CONSTRUCTING RAILROADS.—Invention to prevent accidents on railroads, and save fuel..... 209

ARGILLO—Steel from cast iron..... 210

☞Those of our subscribers who are indebted to us for the Western Journal, are requested to remit the amount at their earliest convenience. Remittance may be made by mail at our risk. Current bank notes will be acceptable.—[Editors.

THE

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ART. I.—INCREASE IN THE QUANTITY OF GOLD—ITS EFFECTS.

No age since the christian era, has been so fruitful in events calculated to ameliorate the condition of man, and incite him to the attainment of a higher degree of civilization, than this in which we live. And these events follow in such rapid succession, that while we are yet admiring some brilliant discovery, and contemplating the benefits which are likely to result from it, our speculations are arrested by the announcement of some other, perhaps still more imposing, and not less important. What wonderful agents are steam and electro-magnetism! And did we not know that power has been given unto man to subdue the earth, we might conclude that he had reached the utmost limit of discovery in the field of natural science; but these great agents are to be regarded only as pioneers, to open the way in his march to a higher destiny; for, doubtless, other agents, not less potent and useful than steam and electro-magnetism, remain yet undiscovered.

The relations between the physical and moral world have not been sufficiently observed, to enable us to determine how far, or in what degree, a discovery in the science of one, is calculated to enlighten us in regard to the other; but we may safely affirm, that every discovery that is calculated to enlarge the means of human comfort, without increasing the amount of labor, must tend to improve the moral condition of mankind; and it is a provision in the economy of nature, not less beautiful than benevolent, that although an individual may have been prompted by motives purely selfish, to spend his life in the search of some valuable discovery, yet, whatever he achieves in natural science, enures to the general benefit of the race, and all who choose may enjoy the fruits of his labor.

We have been lead into these reflections, in connection with such as are suggested by the accounts of the recent discovery of gold in California, not because of any merit involved in this discovery, but for the reason that it is associated in the mind, with the other great events of the age. And if the quantity of gold should correspond with the reports received from that region, it will be calculated to give still greater force and efficiency to the many useful discoveries in natural science, which have already produced such astonishing results.

Considered simply as a metalic substance, an increase in the quantity of gold—no matter how great—would be of little importance in the private or political economy of this or any other country. Its abundance would but serve to lower the estimate which mankind place on it for ornamental purposes; and, entering into commerce, its price, like that of other metals, would be governed mainly by the cost of its production. But when considered as money—the representative of the value of all other commodities—an agent of exchange recognized and accredited by all civilized nations—it is obvious that any great degree of increase or diminution in the quantity, is calculated to affect the business and social relations of every country; more especially if such increase or diminution should suddenly occur. But so many facts and circumstances are necessary to be known and considered, in connection with the question of increase or diminution, that it would be impossible to predict, with any degree of certainty, the nature and extent of the effects that either would be likely to produce. The general laws are plain and easily comprehended; but the modifications are infinite, and in most cases are not perceived, until brought to our view by the exigencies that daily arise.

All commodities are priced with reference to the amount of money which it is supposed they would command if brought into market; but as a very small part of the property of a country is in market at any one time, the numerical amount of money bears but a very small proportion to the aggregate price of other commodities. In the United States the proportion is about one of specie to seventy-five of other commodities, including lands and their products. The amount of specie in this country is estimated at about $100,000,000, about five dollars to each individual; nearly one-half of this is reported to be in the banks. The paper currency is estimated at about $125,000,000, or six dollars to each individual, making the total circulation about $175,000,000, or eight dollars and fifty cents to each individual. Now, supposing the *placers* of California to produce $100,000,000 per annum for a series of years, it would be highly important that we should be able to form some rational conclusion respecting the influence that so large an accumulation of the precious metals would have on the prices of property, and the business relations of the country; otherwise we should be in great danger of running into speculations which would bring disasters upon the country that would overbalance the benefits derived from an augmentation in the quantity of gold. If in the period of one year the prices of property and labor were to advance fifty per cent. throughout this country, it is obvious that it would close our manufacturing establishments; suspend the production of iron; and put an end to the exportation of breadstuffs, if indeed it did not invite the importation of wheat from Europe. Such a state of things, however, could not long exist, for it would require more gold than we shall probably ever get from California, to supply the drain from the country, that would be occasioned by such an event. Some intelligent individuals seem to entertain the opinion that were the quantity of specie in the United States doubled, the prices of property would advance in equal proportion: no error, we think, would be more fatal to the prosperity of this country than that of acting in ac-

cordance with this proposition. It is an inherent property of money to seek the best market, and, unless in some way restrained, it is diffused throughout the commercial circle of the civilized world by laws as certain as that which compels the mountain stream to the ocean, where all the waters find their level. Were the coinage of the United States increased to $100,000,000 per annum, it would doubtless make money more plenty in this than in any other country, as long as this extraordinary product continued; but when the amount received from the mines should begin to diminish, money would again become scarce, and as the mountain stream, swollen by a summer shower, shrinks into its natural channel as soon as the rain ceases, so would this flood of gold soon be lost in the great ocean of commerce, and no more would remain than by the laws of its circulation would be required to represent the property and labor of the country.

Although the quantity of money may not bear the same proportion to the population in different countries, yet the peculiar wants and pursuits of each nation require a certain portion of the entire sum contained in the world; and if from any cause the amount thus required should be diminished, it affects not only the country which suffers the loss, but all others with whom it carries on an exchange of commodities are in some degree affected also. But a vacuum thus occasioned by an extraordinary demand, cannot long remain; for if the people continue to prosecute their former pursuits, and their general economy should undergo no change, a reflux would take place until the country again obtained its due proportion.

Hence, in calculating the effects resulting from an augmentation in the quantity of the precious metals, we should endeavor to ascertain the proportion that the accumulating sum bears to the total amount in existence. We are not aware that any government has adopted means of ascertaining the quantity of gold and silver within its jurisdiction, and the estimates that have come within our observation, vary so widely, that they are entitled to but little respect. We notice in the Merchants' Magazine, for February, 1849, an article from the Bank Note List, published in Boston, in which it is stated that "the amount of gold and silver in the world is generally estimated at ten thousand millions of dollars." This estimate is, doubtless, too large, for if we adopt Malte Brun as authority, respecting the population of the earth, this sum would amount to more than $15 to every individual in existence, including both civilized and savage nations. The Liverpool Journal estimates the amount of money in existence at £800,000,000, about $4,000,000,000. This may not be far from the truth; and if we adopt it as a data for calculation, we shall find that an increase of $100,000,000 would add only about 2½ per cent. to the quantity in existence, a rate of increase that would scarcely be perceived, when diffused throughout the channels of commerce.

Still, as we have before remarked, so long as the current continued to flow through this country, it would be far more abundant here, than in any other part of the commercial world; and this abundance would doubtless tend to depress its value; but this tendency might be counteracted, perhaps, entirely, by the increased activity that would be imparted to business—for, by increasing the number and amount of ex-

changes that take place in other commodities, more money is required; and hence it does not necessarily follow that an increase of money depresses its value. We have shown that the specie and paper circulation in the United States, is about $8 50 to each individual. We learn from a statement exhibiting the amount of paper circulation in this country, published about twelve months since, that the State of Massachusetts had a circulation of $23 42, and Rhode Island of $26 05 to each individual—assuming the census of 1840 as the basis of calculation—while we imagine that the circulation of Missouri, including both specie and paper, does not exceed five dollars to each individual; and yet, we believe that common labor is about as high in Missouri as in Massachusetts. This is, doubtless, owing to the fact that a much larger number of transaction requiring money, take place in Massachusetts, in proportion to the number of its inhabitants. In manufacturing establishments, the operatives are paid weekly; money is daily required for the purchase of material; board is paid at short intervals, and the products of the establishment are continually in market; and so great is the demand for money to effect all these exchanges, that notwithstanding its abundance, it affects but slightly, if at all, the price of labor. Agricultural districts require much less money than manufacturing; for where the farmer or planter carries on business with his own labor, much the larger part of the means of subsistence and of comfort are produced at the place where they are consumed; and consequently, no money is required, as an agent, to procure the means of daily subsistence. The increase of manufactures, and the construction of works of internal improvement, demand an increase of money; and it is not likely that, if these two great interests should be wisely encouraged, that we shall ever receive gold enough from California to depress its value; and unless the sudden influx should be the cause of inciting a spirit of speculation, it will, instead of breaking down, be the means of building up manufactures in this country. It will also enable us to extend our works of internal improvement, without the aid of foreign capital; and thus, instead of transmitting the profits arising from these works abroad, for the benefit of foreigners, the dividends will remain at home, to be enjoyed by our own people. If we desire to retain an increased quantity of gold in this country, we must enlarge those branches of industry that require its use, and create new commodities, such as railways and other works of improvement, that will not only require money in their construction, but which will also require a certain quantity to represent their value, when completed. Should we fail to do this, a great influx of gold would only serve to raise the prices of property and labor, and this would drive it out of the country as fast as it came in, and tend to check rather than to promote its prosperity.

Reasoning from the hypothesis that the quantity of gold in California is as large as it is represented, it must be admitted that we are about to enter upon a new and untried state of things—one that calls for the profoundest reflection on the part of the statesman, the philosopher, and the man of business. Much will depend on the policy of the general government, in regard to the privilege of collecting the metal. Gold washing is a business that can be carried on success-

fully, without any other capital than a willing mind and a strong arm; and it is doubtless the true policy of the government to prevent the gold lands from falling into the hands of capitalists and speculators. Let the government allow every one to work who will, and for once in the history of man, give to the operative the full benefit of his labor, after charging a reasonable compensation for protecting him in the enjoyment of this privilege. The views of a distinguished Senator from Missouri, expressed on this subject in the Senate, a few days since, so fully coincide with our own, that we extract the following paragraph from his speech, as published in the Cincinnati Gazette. Speaking of the gold lands, he says:

"Instead of hoarding, and holding them up, and selling in driblets, lay them open to industry and enterprise. Lay them open to natural capital—to labor—to the man that has stout arms and a willing heart. Give all a fair chance. It is no matter who digs up the gold, or where it goes. The digger will not eat it, and it will go where commerce will carry it. The nations which have industry—which have agriculture and manufactures—they will get the gold, provided always, that they keep out small paper money. Not sales, but permits, is the proper mode to follow, and the only practicable mode. People are going to California to dig, and dig they will. A wise legislation would regulate, not frustrate their enterprise."

These views are sound and statesman-like, and we trust that they will be adopted by the national legislature. But we cannot sympathise with the honorable Senator in his regret "that we have these mines in California." It may be true, as he states, that gold mining "is a pursuit which the experience of all nations shows to be both impoverishing and demoralizing to a nation;" but we are not prepared to admit that poverty and immorality are necessary consequences of mining for gold. The principle involved in the use of money may be regarded as essential to a state of civilization; and it is difficult to conceive how man could have emerged from a state of barbarism, without its use; and it would be inconsistent with the attribute of Divine benevolence, to suppose that this essential agent of civilization could not be obtained without incurring the penalty of degradation to those who, happening to possess the country in which it is found, are the first to collect it for the benefit of their race. And should we admit what is generally believed, that the gold and silver mines of America impoverished and degraded Spain, from the highest to the lowest point of civilization among christian nations; yet, before coming to the conclusion that the same cause will produce similar effects in this country, we should take into consideration the genius of the people that compose these respective nations; and also, the political, religious, and social institutions by which the one has been governed for the last three centuries, and which govern the other at the present day. During the age of gold, the government of Spain was a monarchy; and a high military spirit mingled with a religious devotion, constituted a prominent trait in the character of the Spanish people. Few discoveries had then been made in the principles of labor-saving

machinery; the power of steam was unknown; and the idea of internal improvements, for the purposes of internal commerce and travel, does not seem to have occurred to the people of that age. And hence, few, or no great objects of profitable improvement existed. Enormous sums were appropriated to the erection of palaces, churches, and fortifications; but these lacked one of the essential qualities of property —they were not transferable; and therefore required no money to represent their value when completed; and there being no increase of commodities at home, to represent the increase of the precious metals, they went, in despite of all restrictions, in search of a foreign market; and when the mines began to fail, Spain became poor, because she had neglected the improvement of her soil, and had done nothing to increase the volume of useful commodities. And a reliance on foreign commerce, and the love of adventure in search of the precious metals, having unfitted her people for those industrial pursuits so essential to a high state of civilization, she became degraded as a natural consequence. But, happily for us, we live under institutions far more favorable to the advancement of civilization. The genius of the age prompts the human mind to the discovery of new agents in the production of useful commodities—to enlarge and diversify the means of subsistence and of comfort—to break down the natural barriers that have been supposed to obstruct human sympathy, and make enemies of those who dwell on different sides—to extend the social horizon and fraternize the inhabitants of every clime, by bringing them in closer communion with each other. The prosecution and consummation of these great objects, demand an increase of the precious metals, and we rejoice that they have been discovered so opportunely. And free from all apprehension that this discovery will impoverish or demoralize the nation, we say with the distinguished Senator from Missouri, "lay the mines open to industry and enterprise;" let gold flow freely throughout the land—it will be found a most potent agent in building up manufactures—in constructing railroads—in stimulating agriculture—in opening the mines of coal, of iron, of copper, and other useful metals; and although the quantity should be as abundant as indicated by the most favorable report, yet it will not be too great for the development of our vast resources; nor more than sufficient to represent the increased amount of property which it will be the means of creating. In the beginning, however, it will doubtless be the cause of disturbing, to a greater or less extent, perhaps every branch of business. The number of ships already taken up for California, has seriously affected the price of freights, and will, consequently, affect the price of produce; but it will favor manufactures and tend to build up a home market. The want of vessels, however, cannot long continue; for the ship builders will soon supply the demand; and thus, we perceive, that already an increase of money is required to represent the value of several hundred vessels, before the gold has reached the States.

Should the mines turn out as productive as they are represented, the first influx of considerable quantities of gold will, doubtless, incite a spirit of speculation; and we have more to apprehend from this than from any thing else connected with the discovery; but this is an

evil that cures itself, in time, and though much to be deprecated, is not altogether void of good; for a spirit of speculation frequently prompts men to undertake enterprises that might otherwise have slumbered for ages; and although they may fail for a time, yet, perhaps, enough is done to establish their practicability and usefulness, and thus open the way to the consummation of some important improvement.

We freely admit, however, that gold mining is unfavorable to the moral *improvement* of those who are immediately engaged in it; but we do not admit that there is any thing in the employment calculated to *demoralize* an individual whose moral principles are sound and well established. Unhappily, however, a large portion of mankind, and more especially of such as engage in gold mining, are governed more by the ordinary observances and conventional restraints of society, than by principles that may be called their own; and when these observances and restraints are removed, as must be the case when a large number of men are collected together in the mountains and forests, they are left with no better guide for their actions than their selfish propensities, and doubtless become more licentious; but this is owing to a change of circumstances rather than to a change of morals. From this cause, the social condition of California is likely to suffer deterioration as long as the mines continue highly productive. Nor can the agricultural resources of the country be developed as long as labor continues at present prices; and hence, so far as the people of California are concerned, we agree with Senator Benton, that the sooner the mines are exhausted, the better for them.

The settlement of Oregon and California by a civilized race, completes the circle of civilization around the globe, in the temperate zone of the northern hemisphere, and is certainly to be regarded as an important era in the social history of man. Had those regions contained no other inducements for settlement than such as the soil and climate afforded, the growth of their population would have been slow, and generations might have passed away before our possessions on the Pacific coast would have added anything to our national wealth, or prosperity; and the benefits to be derived from the extension of civilization around the earth, would have been delayed to an indefinite period.

One who recognizes the principle, that there is a Providence which directs the destiny of nations, will delight to contemplate the facts connected with the location and discovery of gold in California. If that higher state of civilization, which is based on the christian religion, is ever to prevail throughout the earth, it can only be established by increasing the intercourse between its inhabitants. Commerce, of which money is an essential element, is the great agent of civilization; and it may be safely affirmed that, through its means alone, can the many hundred millions of Asia be christianized. Nor does it seem possible that much progress can be made in this great work, until a more direct and speedy communication is opened between the Atlantic and Pacific Oceans; and what other agent so efficient in bringing about this result, as a large deposit of gold near the Pacific coast? When we consider that the existence of this gold has been known for

a century, and that it has remained untouched through all this time, we can scarcely resist the conclusion that it was reserved as the means of opening a communication between the two great oceans, through the heart of the American continent. Should this important work be consummated, we shall then require a large addition to our present stock of the precious metals, to enable us to carry on the immense commerce which will at once be opened between this country and the continent of Asia, Australia, and the rich Islands of the Indian Ocean.

With so many objects demanding an augmentation in the quantity of the precious metals, we conclude there is no just reason for supposing that any material depression will take place in their value, even if the quantity of gold in California should be equal to the most extravagant accounts. And hence we regard these mines as an important element of national wealth, and of national greatness; calculated to quicken the development of the vast resources of this country; to enlarge our intercourse with all the nations of the earth, and advance the cause of civilization throughout the world.

ART. II.—COMMERCE OF THE EAST—NO. V.

ADVANTAGES OF A RAILWAY.

BY J. LOUGHBOROUGH, ESQ.

Objection as to snows answered—Direct benefits of a Railway—1. The employment it will give—2. Increase of commercial facilities—3. Value of lands—4. Repairs, &c.—5. Increase of interior trade—6. Increase of civilization—7. New lands made productive—8. Diversity of pursuits and products—9. Bind us to California—10. Bring out minerals of the mountains—11. Pastoral regions—12. Saving in ships—13. Amounts paid by whaling ships—14. Outlet for the valley of the Mississippi—15. Description of all the countries of Eastern Asia—16. This road will give impulse to others——Historical account of a canal across Egypt, and modern projects of Mohammed Ali—Invasion of it by Napoleon—Description of route to India now in use through Egypt—Some account of the currents, trade-winds, and monsoons of the Indian Seas—Canal across the Isthmus of Tehuantepec—Comparison of advantages of the routes through Egypt, through the Isthmus, and across our continent—Political errors—Moral effects of opening a new route to China.

BEFORE proceeding to sum up the advantages of a railway to the Pacific, it is necessary to advert to an objection which has been urged seriously, as respects the practicability of the work. The objection is, that it would be, for a great part of the year, rendered useless by the snows. As this objection was once suggested to the writer by an intelligent member of Congress, it deserves consideration. The following is the result of numerous enquiries, addressed to able engineers:

If a railway be covered by *wet* snow, some inches deep, there is some danger that the passage of cars over it will press it into a sheet of ice; and, when this is the case, there is not sufficient friction to

enable the cars to move forward. The wheels revolve rapidly, but no progress is made. Again, in deep cuts, if large masses of *wet* snow are drifted in upon the rails, the impediment is nearly equal to a bank of ice. On the contrary, *dry* snow constitutes no impediment at all. If *thin*, it does not hurt; and, if fifty feet deep, a car will plunge through it as easily as through a fog bank. A *wet* snow is very rare on the western border of Missouri, and a few miles west of it *never* occurs. But, why may not a railway be elevated a couple of feet? This would avoid the whole difficulty with entire certainty.

The benefits to be anticipated from the construction of this great work, are—

1. The employment it will afford to large numbers of individuals, who are now profitlessly engaged in pursuits which are not sufficiently diversified to be productive. There are thousands of able bodies and willing minds now in this Union, to say nothing of the thousands which Europe is anually pouring upon our shores.

2. By increasing the facilities for getting to a market, the capital and labor now unproductively employed in seeking one, would be applied to the production of wealth. This would enable the farmer to multiply his products; and this multiplication would again enable the manufacturer to set more machinery to work, and give more employment to labor, and the final result would be a larger surplus to sell or exchange with foreign nations.

3. The value of the lands in the vicinity of such a road would be instantly quadrupled, because the facilities for getting to a market would render the products of agriculture more valuable.

4. The construction, care, and repair of the railway, will require a permanent force of able bodied men; and these men will require a large amount of agricultural and manufactured articles.

5. It will treble the interior trade of the Union, by giving a new impulse to industry, and rendering it profitable to exchange many articles of consumption, which cannot now be profitably exchanged, in consequence of the deficiency of facilities.

6. A broad belt of civilization will span the continent, diffusing its invigorating and wholesome principles, and habits, through regions which otherwise must remain savage and desolate for ages to come.

7. Thousands of square miles of land will find a profitable market, and be made to yield the elements of comfort and happiness, which otherwise must forever remain uninhabited and unproductive.

8. It will diversify the pursuits of our people, and thus save large amounts which now seek a foreign market; and, by introducing a greater variety into the agricultural products of the country, exchanges will be multiplied.

9. It will bind us, as with a band of iron, to our colonies on the shores of the Pacific. The great mountain barriers which it was once thought nature herself had erected to separate nations from each other, will no longer present an impediment to political and social unity; and we will secure, free of duty, an interior commerce more widely extended, more diversified, and more productive than the world has yet witnessed. The thronging millions who are destined to fringe the Pacific, instead of growing up into power and splendor, as aliens to

our institutions, laws, and principles, and rivals and enemies in trade, will be united to us by common sympathies, opinions, habits, laws and constitutions. Civil and religious liberty, the life-spring of all our prosperity, will diffuse their invigorating influences from the Atlantic to the Pacific, and thus give to the whole continent one motive power.

10. Within the recesses of the great mountain chains which stretch for hundreds of miles west of the south pass, are embosomed numerous and rich mines of the precious and useful metals. These mines can never be worked to advantage, or their wealth brought out and diffused, without a railway.

11. West of the States there is the finest pastoral region in the world—and the like is true as respects the valleys of the Rocky Mountains; and the water power and coal in upper Oregon and California, are exhaustless. Here, then, the raw material and the manufacturing power lie side by side; but these will remain utterly wasted and unproductive without a railway.

12. Should this road be constructed, a large amount would be annually saved in consequence of the trade crossing the continent, instead of rounding Cape Horn, a dangerous Cape, where many losses have already occurred.

13. There are now annually employed in the Pacific three hundred whaling vessels. They are compelled to re-cooper once or twice a year. Heretofore and now they seek the ports of South America and the Sandwich Islands to do so. The average expenditure of these vessels is one and a half millions. Complete this road and these vessels will resort to San Francisco, because they would there be in direct communication with owners and friends; they would be free from lawless seizures and port charges, and they would, above all, be in the waters of the Union, and under the protection of its glorious flag.

14. Once finish this great work, and we shall have a market which can *never fail* for *all* our surplus products of every kind. Whenever the equilibrium of trade should be disturbed by European wars, or domestic accidents, or providential inflictions, and thus a surplus should be collected in any branch of industry, which could find no home or European markets, this will prove a certain, and safe, and profitable outlet. How much will be thus saved from perishing? and how much will the law of demand and supply, and other conditions of trade, be steadied? In truth, a market which may at *all* times be resorted to, without danger of glutting, will operate like a balance wheel upon the whole commercial system of the country, and relieve us from all those sudden changes, and perpetual and unanticipated fluctuations and revulsions, which have hitherto rendered all commerce a species of gaming, and been the prime cause of all the depravity of principles with which we are afflicted in the common affairs of life.

It will make this basin of the Mississippi the centre of the world's civilization; the home of plenty, the seat of science and the arts, and we shall hold at the same time the sceptre of power. With the finest climate on the globe—healthful and salubrious—mineral resources exhaustless, and soil which, with moderate culture, will teem with all the necessaries and comforts of life, we need only the stimulus of a *demand* to bring into existence all the elements of wealth and splendor.

The construction of this road will create that demand. It is sometimes supposed that the expense of transportation across the continent and the Pacific would be so great, that the new route to China could not be made to rival that at present in use. This is a mistake. For ships freight is estimated by a measurement of forty feet to the ton, and for railroads by weight. Young Hyson teas (the heaviest description, compared in weight and bulk with flour,) require two tons measurement to one ton weight, and $7 per ton measurement from China to Oregon would be a large freight, compared with the present rate from here to Europe; and, at one cent per ton, per mile, weight, (an amount of toll sufficient to keep the road in repair, and yield dividends,) the cost to St. Louis would be $10—whole cost from China, for a ton weight, $24. But there is no need of this road being made to yield a dividend. It should, on the contrary, be only productive enough in tolls to keep it in repair; and a half cent per mile per ton would be ample for this purpose. This would make the cost of a ton weight of tea, from China to St. Louis, $19.

Again, corn can be taken from St. Louis to the Pacific at 25 cents per bushel, and for 15 cents more to China—whole cost 40 cents—and it will be worth there 75 cents per bushel. Wheat can be taken from St. Louis to the Pacific for $1 per barrel, and 50 cents more to China, and will be worth there $10 to $15. These articles cannot now be taken to the east with profit, because of bulk and weight, and the sea voyage through the tropics; and their transportation can be performed, *by sail vessels*, in less than half the time now consumed from Canton to London. But, if steamers are placed on the line from Francisco to China, the trip may be made from London in forty days, from New York in twenty-eight days, and from St. Louis in twenty-five days. We have no other articles heavier, in proportion to size and cost, than corn and wheat; and, if this outlet for the products of industry shall be created, who will undertake to calculate the limits of our productive energies? But, with all that science, skill, industry and numbers can accomplish, we shall be still unable to *supply* the new *demand*. For,

15. Of the eight hundred millions of people who inhabit the earth, six hundred are in the islands and upon the coasts of the Pacific Ocean. These six hundred millions have been in the rear of the Europeans. They are very poor navigators, and they would be glad to give up to us the whole carrying trade of the Pacific. Their ancient habits will be broken—the spell of ages will be removed—and, stimulated by commerce, they will awaken to a new life, and manifest new tendencies. These people are now subsisted, for the most part, upon rice and pulse. We will take to them meat and bread, and metalic implements, and they will eagerly grasp the proffered benefit. Look upon the map, and behold the length and breadth of the lands which this road will open to American trade.

The Russian possessions, north of us, are not inconsiderable. They now need supplies of meat and bread, for which they are able to give furs; and these furs are equal to cash in Asia.

Manchuria, or Manchoo Tartary, is the northern division of the Chinese Empire. The Sea of Okhotsk is its outlet. Into this sea empties the river Saghalin, in latitude 53 deg., and east longitude 141

deg. north of the Island of Japan. This river is one of the largest in the world, and is navigable for an immense distance. Rising in Mongolia, it winds through a part of Russia, and drains in its course near 900,000 square miles. It is the only outlet for this vast region. The population of this region is unknown. Those of the northern portion are nomadic, but the southern are agricultural. Who can estimate the value of trade here?

The Islands of Japan, extending from latitude 50 deg. to 30 deg., and in longitude 128 deg. to 150 deg., come next. The population of these Islands are estimated at 50,000,000, at the lowest. They are, at present, even more jealous of foreigners than the Chinese; but necessity will soon open their ports. They are industrious and skilful. Silks, teas, and a variety of manufactures are produced by them. They possess large mineral resources, especially of copper.

Next in order is the broad empire of China, between 20 and 60 degrees of north latitude, and 70 and 140 degrees of east longitude from Greenwich. The population was estimated in 1813 at 367,000,000 by official reports, and other accounts say more. The provinces of this great empire are, 1st: Pe-chi-li, of which Pekin is the capital. The population is 16,702,763, and that of Pekin from one to three millions. Its area is 58,949 square miles. This province is nearly a sandy desert. Mr. Gutzlaff says, "as the country here yields very few productions, and Pekin consumes immense quantities of stores, the imports are very large." 2. The Shan Tung province, south and east of the first. Its area is 56,800 square miles, and its population 28,968,760. The two emporia are Ting-choo-foo and Kan-choo-foo. The Grand Canal runs through a part of this province. The capital is Tenan-foo. The coal mines of this province supply the empire. 3. The provinces of Keang-soo and Gan-hwuy lie on the south of the last, area 81,500 square miles; population 72,011,500. These are the most fertile and populous provinces of China. In this district is Nankin, the great city of Loo-choo, and other large towns. The inhabitants are rich, cultivated, ingenious and industrious. Here are the finest silk manufactories. The Yang-tse-Keang, a large river, flows through this district. There are also some other navigable streams, and the Grand Canal passes through its entire length. It is the commercial centre of China. At the mouth of the great river is the city of Changhae, the western terminus of our proposed line of steamers. 4. Honan lies west of the last mentioned. Its area is 6,200 square miles, and population 23,037,171. It is said this was the first tract of land inhabited by the Chinese. The capital is Kai-fung-foo, a large city. The mighty river Hoangho flows through the entire province, and is navigable the whole distance. 5. Next is Chi-Kiang, emphatically called the land of silks and teas. Its area is 57,200 square miles, and population 26,256,784. These are the most polished people of the empire. The Island of Chusan is on its coast. Ning-po, the port for foreigners, is opposite Chusan, and has an excellent harbor. Hang-choo, its capital, ranks only second to Pekin. This province is the great tea producing and silk manufacturing district. The Grand Canal passes through it. 6. The province of Fuh-Keen is on the south of the last. Its area is 57,150 square miles and its population

14,777,410. Formosa is in front of this province. The southern portion is barren; the northern fertile in grain and teas. Here the black tea is mostly produced. It has a number of fine harbors through which there is an active trade. Among the principal of these, open to foreign trade, is the residence of many rich merchants. Three hundred large junks belong to this port. Foo-chow-foo, the capital, is situated on the river Min, which is navigable for large ships within ten miles of the city. The Island of Formosa is very fertile, producing sugar, rice, camphor, &c. It also has rich beds of coal. 7. The Kiang-si is directly west of the two last provinces; its area is 27,000 square miles and population 30,427,000; it is amazingly fertile, and has some large cities. The great Yang-tse-Keang crosses its northern border, and one of its branches runs through the whole length of the province. 8. Directly west of the last are Hou-quang-now, Hoo-pi, and Hoonan, with an area of 168,300 square miles, and a population of 36,022,605. It is said to be fertile and to have some large cities. The Yang-tse-Keang flows entirely through. 9. South of the Melin mountains we come to the province of Quang-tong, fronting the China Sea; its area is 97,100 square miles, and population 19,170,000. Its principal city is Canton, which, until 1842, was the only port open to foreigners. Its population is one million. It is about seventy-five miles inland on the Choo-Keang river. M'Clelland says of Canton before 1842, "The great mass of the foreign commerce (estimated at $80,000,000 per annum,) is carried on by the English and Americans." 10. Kwang-si is situated directly west of the last and communicates with Canton by a large navigable river. Its area is 87,800 square miles and population 7,313,895. Its produces abundance of grain and has rich beds of ore.

The foregoing are only the provinces directly on the coast, or which are connected with it by rivers of size.

The aggregate population of these provinces is 274,667,977. The interior provinces trade freely with these. Some of the rivers of China even rival the Missouri. Such are the Saghalin, Pi-ho, Whoang-ho, &c. The Yang-tse-Keang (Son of the Sea,) takes its rise in the Pe-hing Mountains, in Thibet. After a long and tortuous course, it enters the Chinese Empire, winds through the richest portion of the country, and the most numerous population on the globe; and, after crossing the whole Empire, and watering by its branches an immense and fertile region, enters the Ocean in north latitude 31 deg., just in front of the great city of Changhae. It is 4,000 miles long, and navigable to Thibet.

The population here given, is taken from the imperial census of some years back. According to the best and most recent estimates, it now exceeds 450,000,000. The people of China are a sober, industrious, and pains-taking people. In some branches of manufacture they rival, and in others surpass, all other people. In teas, they have no rival; plain silks they can make cheaper than any other nation. They have an abundance of raw silk for export. Some of their goods are richer than similar fabrics of other countries. They produce drugs, camphor, rhubarb, and other medicaments for all the world; and they can produce a supply of sugar for the whole world. They use but little machinery, the population being dense and labor cheap. We can

multiply their productive power by introducing improvements. They import manufactured cotton, woolen goods, and metalic implements from England. From Bombay, Calcutta, &c., they import 400,000 bales of cotton, and $20,000,000 worth of opium. They also import a variety of articles from the neighboring seas and islands. They need our flour, maize, meats, and all our productions fit for food. These articles cannot now be taken to them; but create this railway, and it will be done at once. But, this road will create other productive sources of trade.

The Sandwich Islands, situated in north latitude 20 deg., and west longitude 156 deg., are distant from Francisco 2,160 miles. The population is 108,000. Their present imports are $475,000, and exports $460,000. They are fertile, and produce sugar of fine quality. They have become almost civilized. In 1831, they owned 14 vessels, of 2,630 tons aggregate.

The Polynesian Islands have a population of 1,500,000. They are fertile, and produce a great variety of articles. Their inhabitants are naked and barbarous; but, like the Sandwich Islanders, commerce will civilize them.

The Island of New Guinea, in south latitude 9 deg., and longitude from 120 deg. to 150 deg., has an area of 305,540 square miles. The inhabitants are agricultural, and anxious for trade.

Australia, in 10 deg. south latitude, and from 113 deg. to 153 deg. east longitude, is in length 1,750 miles. Its coast line is 7,750 miles. It has an area of 3,000,000 square miles, and a colonial population of 160,000, and a native one of 63,000. With the adjoining islands, there is an aggregate of 1,000,000 souls. It is distant from Francisco 6,000 miles. Coal is abundant on this little continent, and near the surface.

In latitude 2 deg. to 6 deg. north, and longitude 109 deg. west, is the Island of Celebes, less than 6,000 miles from Francisco Bay. It has an area of 75,000 square miles, and a population of near 3,000,000. This is a Dutch possession.

Java, in latitude 6 deg. to 9 deg., and longitude 105 deg. to 115 deg., is 600 miles in length, and from 40 to 130 miles broad. Area, 45,700 square miles. Population near 6,000,000. This is another Dutch possession, and rich in tropical products—coffee, sugar, indigo, &c.—of the annual value of $30,000,000. It is distant from Francisco Bay 6,920 miles.

Sumatra, directly upon the equator, is 1,050 miles long, with an area of 122,000 square miles, and a population of 2,000,000. Rich in aromatics and spices; 30,000,000 pounds of pepper is annually produced. Distant from Francisco Bay about 6,900 miles.

Borneo, upon the equator, in longitude 119 deg. east, is 750 miles long, and 350 miles broad, has an area of 260,000 square miles, and a population of 4,000,000—150,000 of whom are Chinese. Here all the productions of the tropics abound. It also has minerals—some gold, antimony, tin, and diamonds. The harbors are good. Distant from Francisco Bay about 7,000 miles. The gold mines of Sambas, Capt. Brooke says, yield $2,600,000 per annum. The inhabitants are honest, industrious, and thriving. It can be made to yield $150,000,000 worth per annum, for export.

The Phillipine Islands, rendered immortal by its famous Governor, the uncle of Camilla, who duped Gil Blas, are situated in latitude 5 deg. to 20 deg. north, and longitude 117 deg. to 120 deg. west. They have an area of 134,000 square miles, and a population of 3,500,000. They produce sugar, coffee, indigo, hemp, &c. Distant from Francisco Bay 6,340 miles.

The Island of Singapore, situated at the extremity of the Malay peninsula, latitude 1 deg. north, and longitude 103 deg. east, has a fine, healthy climate, and is so centrally situated that it is believed all the commerce of British India must centre there. Distant from Francisco Bay 7,400 miles. The area of British India is 1,357,000 square miles, according to Waterston, with a population of 184,300,000. The commerce now centres in Calcutta, Bombay, Madras, Ceylon, and Singapore. The aggregate yearly amount of exports is $165,000,000.

In addition to all these places for thriving trade, the whole west coast of America will yield untold millions of profit; and the vigor, courage, activity, and perseverance of our sailors, will discover in the bosom of the ocean itself, rich deposits of wealth in the shape of shells, pearls, &c.

16. The construction of this great central railway across the continent, would make it the interest of all sections of the Union to unite themselves to it by branch lines; and all these improvements would increase many fold the productive capacity of the country, and diffuse a greater variety of the comforts and luxuries of life throughout the United States.

The foregoing considerations, in themselves, furnish overwhelmning evidence of the utility of this great work; but, in addition to them, a large number of intelligent persons, among whom are Mr. Whitney, Senator Breese, and other distinguished citizens, are impressed with the conviction that the commerce of Europe with China and eastern Asia, would be diverted from its present channel, across our continent. These gentlemen have estimated that the value of the vessels of Europe and America, now engaged in the trade beyond the Cape of Good Hope, is about $61,000,000. If this trade is diverted across our continent, one-half the tonnage would be sufficient to carry it on in both oceans, thus making a saving of about $30,500,000. And an additional saving will be made for hands, insurance, wear and tear, interest, &c., of $16,700,000. In addition to these facts, it is urged that the carriage of passengers and mails would yield a revenue of $4,000,000; and, that the tolls payable on this road, for all the goods now carried to Europe around the Cape of Good Hope, would amount to upwards of $20,000,000.

The author of these articles is not prepared to assert positively that the whole commerce of Europe with Asia would necessarily be brought across our continent upon this railway. To come to such a conclusion quite a large number of facts must be taken into consideration, such facts as are difficult of access in America, and which he has seen no attempt to collect on the part of those who urge the argument with the greatest zeal. Let us relieve these dry details for a few moments by a historical reminiscence, and then sum up all the facts in our pos-

session, from which the reader will be left to make his own inferences.

It is well known that there was anciently a canal from the Nile to the Red Sea. The historical facts which have come down to us are as follows:

Herodotus says (B. II,) that a canal was cut from the Nile above the city of Bubestis; that it turned a mountain from the west to the east, and afterwards turned south to the Red Sea. He attributes its commencement to Nechos, the son of Psammetious (616 B. C.) but gives its completion to Darius Hystaspes, (521 B. C.) It was four days navigation and four ships could pass abreast.

Aristottle (Met. B. I, ch. 14,) says a king had attempted to cut a canal from the Red Sea to the Nile, but abandoned the work because the Red Sea was higher than the land of Egypt.

Diodorus Siculus (B. II,) attributes it to Nechos, but says it was completed by Ptolemy Philadelpns, (280 B. C.) when it was named the river of Ptolmeny; but he makes it communicate with the Persian branch of the Nile.

Strabo agrees with Herodotus. He says it was 100 cubits in width, with a depth sufficient to carry large vessels, (B. I and XVII.) He adds that it terminated at the Arabic Gulf, and that in his time the merchants of Alexandria found an outlet from the Nile in the Arabic Gulf to go to India.

Pliny says this canal was begun by Sesostris (970 B. C.) near Bulastis (B. XXXVI. ch. 29,) and went to the Red Sea; that Darius proceeded with it afterwards, and Ptolemy still farther improved it. He says that the latter conducted the canal by the Bitter Fountains, but ceased soon after, having been told that the Red Sea was three cubits higher than the land of Egypt.

The geographer Ptolemy, who lived in the time of Trajan and Hadrian, (B. IV, ch. 5,) calls it Trajan's river.

Omar-abor-el-Hatlab ordered Amron, who had conquered Egypt about the year 635, to open the canal fromthe Nile to Quotzoum on the Red Sea, to convey the contributions in corn to Arabia. Elkinain informs us that it was shut up again by the Caliph Almanzor in the year 773.

From these respectable authorities there is reason to believe that there has at sundry times been a canal open from the river Nile to the Red Sea, at the bottom of the Gulf of Suez; and that there had been the means of using it. Whether ships passed from the canal into the Red Sea, does not appear. There might have been a transhipment and probably was. It is certain that this route was afterwards abandoned, and the commodities of India landed at a place under the tropic called Berenice, (the same mentioned in the first of these essays,) situated about 450 miles south of Suez; whence they were transported across the desert to Coptis, and thence down the Nile to Alexandria.

The invasion of Egypt by Napoleon was undertaken for the purpose of crushing the British power in India, by creating a navy upon the Red Sea—re-opening this ancient canal, and finally uniting the western powers of Asia against the British and invading their possessions overland.

During the life of Mohammed Ali it was contemplated to open the

old canal, but the project was finally abandoned under the apprehension that the winds would drift into it the sands of the desert. Of late years two other projects have been under advisement—the one for a ship canal from Tineh to Suez; the other for a railway from Cairo to Suez. What the probabilities are for the completion of all these works, we have no means of ascertaining. Since the deaths of Mohammed and his son Ali Pacha, it is most probable that Egypt is left without a vigorous head to give impulse to its physical force. Whether there is any prospect of the English taking possession of Egypt, we cannot determine. Our impression is that all Europe would resist the attempt.

In instituting, however, a comparison between the route across our continent from Europe and one through Egypt, it is as well to place it upon the supposition that rather than become tributaries to us, the nations of Europe would enter into treaty stipulations, by which a railway from Cairo, or a canal from Tineh, will be made. Bearing this in mind, we will now sum up the facts.

From London to Alexandria, steamers now make a trip in fifteen days it is said, but this is more than doubtful. From Alexandria to Cairo is 112 miles. This may be made in one day. From Cairo to Suez is 76 miles. By railway, a couple of hours would be sufficient. The Red Sea is 1420 miles in length, but steamers cannot approach Suez nearer than two miles. Here is a transhipment, which may be made in boats of 30 to 60 tons. From the Gulf of Aden to Bombay is 1500 miles; thence to Calcutta is 1050 miles, and from Calcutta to Canton, is not less than 2500 miles. McCulloch, in his dictionary says, that the East India Company make a trip now, with steamers, from England to Bombay, in less than 60 days, touching at Marseilles. These are the distances, the impediments, and the time as given by McCulloch.

Sixty days to one who only looks upon a map or globe, would seem a long time for such a trip; but when the nature of the currents, trade winds, and monsoons of the Indian Ocean, are taken into consideration, we shall find reason to think that McCulloch is nearly correct.

1. There is a constant current moving westward from Bombay to the African coast, and with this current the trade wind, properly so called, generally coincides. A steamer, then, in passing out of the mouth of the Red Sea, would have to strike nearly south by east, several hundred miles, to escape this current and wind. This on the return trip, would be in their favor, but,

2. In the Indian Ocean between Sumatra and the African coast, and from 30 deg. south latitude to the Artic coast, including the Arabian Sea and the Bay of Bengal, the monsoons blow from September to April, north east; but from April to September, they change to the southwest, and move in with the land to the west-southwest. During the northeast monsoon, the wind is most steady. Another of these monsoons is between Madagascar and the coast of Africa, north of the Equator. There, from April to October, the wind blows in a steady breeze S. S. west, and from October to April it resumes the direction of the trade winds, and varies from northeast to E. northeast.

A monsoon of a less strength occurs in the Chinese Seas, extend-

ing from Sumatra to Japan. The winds here are much influenced by the large Islands. Their prevailing direction from October to May, is from north to south, inclining a little west.

The great equatorial currents of the Pacific also, flow westward from America, and strike the coast of China, and flow down that coast to the peninsula of Asia. This constitutes another difficulty in the voyage to Canton.

These facts render it next to certain that Singapore cannot be reached by steamers, by way of Egypt, from London, as soon as that point can be reached by way of our proposed railway, and positively certain that Canton cannot.

From London to New York, the trip may be made in twelve days; from New York to the Bay of Francisco, in seven days, and from that Bay to Changhae, in twenty-two days, allowing full time for coaling at Halifax, along the line of railway, and at the Fox Islands. This will be from London to Changhae in 41 days. The northern Pacific is not disturbed by adverse winds and currents, as the Indian Ocean is, and this will prove a great advantage.

But a railway of such length will involve a much heavier outlay for tollage, than the short line required between Cairo and Suez; and there are many considerations of policy, and much political jealousy mingled up in this question of preference of routes from Europe to India. Upon the whole, the better opinion seems to be, that although commerce with Asia from Europe, and from the continent, might *possibly* be cheaper than through Egypt, and around the Cape, yet the probabilities are against its taking this direction.

But a new question is suggested by recent events. The projected railway across the Isthmus of Panama has already been noticed; but we have not yet noticed the fact that an English company, have a charter from Mexico, for the cutting of a canal through the Isthmus of Tehuantepec. Notice has been given to the public that this company are preparing to commence this great work; but we have seen no statement respecting the size of the contemplated work. From our knowledge of the Isthmus, we should say that such a canal cannot be made of sufficient size to obviate the necessity of transhipment.

The trip from London to China, by the Isthmus of Panama, with a railway and the necessary transhipments, may be made in about sixty-four days. Will the difference in the prices of transhipment and carriage across the Isthmus, overbalance the advantage in time which our proposed railway promises? The writer has no data upon which to make this calculation.

One serious blunder in our foreign policy has been made manifest by these recent events—a blunder which no one seems to have observed at the time it was made. This was the cession of the Island of Vancouver, and the northern portion of Oregon, to Great Britain. This Island is rich in stone coal; and without it, or some other foothold on the western coast, Great Britain could never hope to open steam navigation from the Isthmus to China. In the present state of steam navigation, a steamer cannot carry coal over 3,000 miles, and pay owners. In this respect, there is little hope of much advancement.

Much was said in Congress, whilst the treaty was under discussion, relative to the danger of permitting Great Britain to have a naval

station on the Pacific coast; as if the population of Oregon, of American blood, were likely to be injured by the commercial rivalry or naval valor of that power; but no one had the sagacity to perceive the capital error of leaving in her hands the means of establishing a rival route to India. But all this is of a piece with the notion that England wanted an American road to India, from Hudson's Bay, for any other purpose than fur trading; or that America could carry on an overland trade to China, up and down the Missouri and Columbia, cheaper than upon the present route; or that there was no wisdom in the policy of securing a route across the Isthmus for *steam navigation*, to Oregon and the East; or that the shortest route from the west coast to China, was by way of the Sandwich Islands; and yet, upon all these points, we have seen wise and grave statesmen involving themselves in blunders, and shaping the policy of the country in a manner which would have fixed indelible disgrace upon a congress of Lilliput.

A few words upon the *moral* results of the construction of this great central line of railway, and we shall have finished the subject. The pyramids of Egypt were erected to gratify the false ambition and morbid pride of a few ignorant and besotted despots; and they are reared upon the lives, and cemented by the blood, of millions of human beings, who wore out their lives in degrading slavery, and derived no earthly benefits from the works of their hands. Shall it be said that a nation of freemen—a nation whose very organization, as a social body, constitutes them propagandists of republican principles, and guardians of civil and religious liberty—have not the vigor of character requisite to open up a commercial road to eastern Asia, which has slumbered in despotism for thousands of years? Directed by the genius of a single individual, we have seen in modern Europe more than two millions of men devote their lives and time to the foolish and fallacious scheme of destroying human liberty, and founding an universal empire. Shall it be recorded in the page of history that 25,000,000 of individuals, who are blessed with all that a bountiful nature can dispense, enriched by the discoveries of science, and the appliances of art, and whose civil institutions secure all their natural rights, and stimulate the individual vigor and energy of each, cannot accomplish a work which will exercise a greater influence upon the destinies of the human race, than all which has ever been accomplished by all the military heroes since the world began? The great wall of China, 1,500 miles in length, was erected as a barrier against barbarian invasion. Too strong and too happily situated to dread that awful calamity, it is proposed not to set up a barrier, but to open up a road to a semi-civilized people, to infuse among them the knowledge of human rights, and spur them on the path of civilization and duty. Shall it be recorded that we have neither courage, skill, enterprise, or benevolence enough to carry out this holy work? The whole continent of Asia is sunk in the sleep of ages. Despotism has paralyzed its intellectual activity and its moral force. Accomplish this magnificent work, and the beams of science will penetrate its shadowy society; the useful and ornamental arts will transform their domestic and social life, and a knowledge of the inalienable rights of mankind, will re-invigorate their torpid communities. The rewards

of their labor will be trebled by the introduction of machinery and chemical skill; their capacity to exchange with other people will be doubled, and successive ages of contact will transform them into a civilized, law-making, law-abiding, and right-observing people. Commerce is, of itself, a great civilizer; but, in the wake of commerce, religion and morals have always followed. This is the testimony of history, and the dictate of common sense. The benign religion of the cross, and its pure moral precepts, will supersede the errors, the superstitions, and the disgusting and degrading rites of an idol worship. These are the moral results to be anticipated from the accomplishment of this great work; and are they not worthy of a great nation—a nation of freemen and philanthropists—of religion and of patriotism?

The writer will crave the indulgence of his readers, for the carelessness of style manifested in these articles. They were written under a pressure of business, and a want of time, which precluded attention to mere composition. He believes the facts here collected will prove of value in the consideration of this important subject.

[In the third number of these articles, the author gave some calculations of distances from London to the east, via. the Cape of Good Hope and the Isthmus of Panama. It is due to the reader to say here, that these distances, as given, are erroneous, and to explain how the error occurred, and rectify it. In the portion of the State where he resides, there is not a good globe to be obtained; nor is there any copy of a commercial dictionary, which gives the distances required; and, therefore, he was compelled to take them from the best authority within his reach. This authority was that of a committee of the Senate of the United States, with Mr. Breese as its chairman; and a committee of the House of Representatives, with Mr. Pollock as chairman; and these committees had certeinly the facilities of arriving at the truth, if any one in the Union had. The writer is not in the habit of relying upon the dictum of any individual, however distinguished; but, in this instance, he feels assured the reader will excuse him for having been mislead. The truth respecting these distances, is of no great consequence to the course of argumentation in which he was moving; yet, nevertheless, he will here insert them for the gratification of the reader's curiosity, and because he does not choose to remain under the imputation of ignorance a moment longer than he can avoid it.

The following are the distances from New York, and from Liverpool, to the places mentioned, as furnished, we believe, by Lieut. Maury, who is in the best position for ascertaining the truth, to the Hon. T. Butler King. The distances are upon the routes, as sailed; and not from point to point, in a series of right lines:

	From Liverpool.	From N. York.
To Calcutta, via. Cape of Good Hope,	16,000	17,500
To Calcutta, via. Cape Horn,	21,500	23,000
To Canton, via. Cape Horn,	20,000	21,500
To Canton, via. Cape of Good Hope,	18,000	19,500

	From Liverpool.	From N. York.
To Valparaiso, via. Cape Horn,	11,400	12,900
To Callao, via. Cape Horn,	12,000	13,500
To Guayaquil, via, Cape Horn,	12,800	14,300
To Panama, via. Cape Horn,	14,500	16,000
To San Blas, via. Cape Horn,	16,300	17,800
To Mazatlan, via. Cape Horn,	16,500	18,000
To San Diego, via. Cape Horn,	17,000	18.500
To San Francisco, via. Cape Horn,	17,500	19,000

The distance from Liverpool to Panama is about	4,500 miles.
From Panama to Changhae,	8,500 "
From New York to Panama,	2,000 "
From New Orleans, or Mobile, to Panama,	1,600 "

The following table shews the saving of time from New York by the route via. the Isthmus, as compared with the old routes via. Cape Horn and the Cape of Good Hope, to the places therein named, estimating the distance which a common trading ship will sail per day to be 110 miles, and calculating for the voyage out and home:

	Distance via. Cape of Good Hope.	Length of passage out and home.	Distance via. Cape Horn.	Length of passage out and home.	Distance via. Isthmus of Panama.	Length of passage out and home.	Saving via. Isthmus over route by Cape of G. Hope out and home.	Saving via. Isthmus over the route by Cape Horn, out and home.
	MILES.	DAYS.	MILES.	DAYS.	MILES.	DAYS.	DAYS.	DAYS.
To Calcutta,	17500	318	23000	418	13400	244	74	174
To Canton,	19500	354	21500	390	10600	192	163	119
To Changhae,	20000	362	22000	400	10400	188	174	212
To Valparaiso,			12900	234	4800	86		148
To Callao,			13500	244	3500	62		182
To Guayaquil,			14300	260	2800	59		210
To Panama,			16000	290	2000	36		254
To San Blas,			17800	322	3800	68		251
To Mazatlan,			18000	326	4000	79		254
To San Diego,			18500	336	4500	82		254
To San Francisco,			19000	341	5000	90		254

We do not agree with the Hon. T. B. King in respect to the time in which he calculates that steam vessels can make the trip to China, via. the Isthmus. It will be seen, therefore, that our estimate allows some days more than he does in his recent report. We wish to state what will probably be done, and not what might possibly be done, under circumstances remarkably favorable; for this is a plain, practical, common-sense question, touching our trade to the East.]

ART. III.—EDUCATION.—NO. I.

BY JOSEPH ORMROD, ESQ.

Much has been said and written on the subject of education. It is the frequent theme of declamation with both writers and public speakers, who mostly, however, dwell only upon its advantages in general terms; they but seldom attempt to enlighten us as to what should be its aim, or how we may best conduct it so as to secure the advantages in question.

Correct views regarding these important considerations are by no means generally entertained; on the contrary, indeed, it is rare to meet with an individual in any community who is sufficiently well informed on the subject, while the importance and advantages of education itself, so frequently insisted upon, are admitted almost universally, but whether *felt* or not, is another question. Men will often give an easy assent to propositions concerning which they have never instituted an inquiry, and on which they have scarcely bestowed a thought. The fashion of descanting, however copiously, on the many benefits conferred upon man by letters and education, if attended with suitable illustrations, cannot certainly in itself be objected to; it is well in its way—but what we stand more in need of, is to be told what are the principles which should guide and govern us in conducting the education of our children, and what kind of discipline will be most efficacious in our schools for developing mind in the youth of our country, and inclining them to a virtuous life.

The public mind needs enlightenment on this subject quite as much as on any other, for assuredly there is no other that involves in it considerations more vitally important; nor need we look for much improvement in the modes of instructiou now employed, until this is effected.

It is not enough that we have the wish to educate well. However desirous we may be to discharge our several duties as parents or teachers, very much will depend upon the views we entertain and the principles we adopt for our guidance. For should we in this respect be in error, we shall, with the strictest integrity of purpose, and with all the zeal and watchfulness we can command, not only fall short of the amount of good we had expected to realize, and of which our endeavors, perhaps, have been worthy, but frequently our labors will be worse than useless; they may often times be mischievous instead of beneficial, for, as remarked by a distinguished author, "if you attempt to act upon the mind in a way not adapted to its nature, the least evil you incur is to lose your labor."

Too little has hitherto been done or attempted for disseminating correct views, and for stimulating the public mind into activity; at least this is the case in Missouri if not in the west generally.

The discipline of our schools as generally prevalent throughout the

State, is very defective, and objectionable in many respects. A large share of my attention has been given to this subject for many years past, and I have been strongly impressed with the little efficiency of the means commonly employed for the development of mind in our youth, and the poor results obtained by those means, even with the best efforts that can be made. It is highly desirable that some improvement should be made upon the present system, and that a more perfect and rational plan of instruction should be devised and adopted. The character of the age, and the present free condition of the human mind demands this, and unless we bestir ourselves in the matter, we shall be in danger of becoming a race of men still more hopelessly hard featured and unimpressible—without elevation of thought, without spiritualism or reverence of any kind, and altogether given up to materialism. The time is coming when we shall have to look to our schools alone to bring us any sufficient corrective to the worst tendencies of the age, but they must be very differently constructed before they can be thus relied upon.

But how are we to bestir ourselves and set about effecting the desired improvement?

There is a great want of competent teachers among us, but in this the several communities who are the employers are at fault. But teachers themselves, however well informed in their duties, and however correct may be their views, can effect but little unaided, and without the suffrages of those on whom they depend for countenance and support.

Prejudices are in favor of usage, and the best devised scheme of education attended with novelty, would meet with opposition if attempted to be carried into effect in a community uninstructed in its merits. Before, therefore, any considerable change in our modes of teaching can be brought about, a change must be wrought upon the public mind. The views of the teacher and of the community which employs him should be consentaneous, or, at least, not widely different, before we shall be warranted in looking for any great advance or improvement in our present system.

In the first place then, information on the subject must be more widely disseminated; and before details are attended to, *principles* must be unfolded and explained in a manner intelligible to the many. The different communities must be aroused to a sense of the propriety and importance of a change in our modes of teaching, and be in a condition to decide upon what that change shall be, for it rests with them to begin and perfect the good work; the teachers can only be helps and instruments.

It is for the friends of education everywhere, those of them at least who have it in their power, by any means, to operate upon the public mind, unsparingly to exert themselves in diffusing the necessary information. Let them give their hearts to the cause and their minds to the task—gather light from every source, and scatter it abroad, and something effectual may then be accomplish.

When the people at large become sufficiently imbued with correct notions as to the duties of a teacher and learn to know what are the qualifications he should possess, they will seek for a class of men

of somewhat different pretensions from those now ordinarily employed, and when obtained they will afford them the needful support. They will not then commit the best interests of their children and their hopes of the rising generation to the care of him who will do their work for the lowest compensation—*hire* their teacher on the same principles that they hire a day laborer, requiring of him a day's work for a day's hire, and expecting him to labor at his vocation from sunrise to sunset, a long summer's day. This I have known sometimes to be the case, the parties being regardless or rather ignorant of the many and serious evils which would thus be inflicted upon their children both in mind and body, by subjecting them to a confinement so little suited to their nature.

The monotony of their occupations during long hours of confinement, is wearisome to children and jading to the feelings of the teacher himself. These are results which should be carefully avoided.

The task of communicating knowledge and rightly forming the youthful mind, is one of no little difficulty, and demands from the individual who undertakes it, higher qualifications and more enlarged views than such as often fall to the lot of those ordinarily engaged in that vocation. And before we can pronounce upon the competence of any one fitly to undertake the responsibilities of an instructor of youth, we must enquire into and ascertain the objects which he habitually keeps in view while engaged in discharging the duties of that arduous and delicate task. It is not merely the amount of scholastic or other acquirements in the teacher—his advancement in literary, scientific, or mathematical knowledge—which should be regarded.

These, certainly, to the extent which they are required in any particular institution, are not to be dispensed with, but in this regard alone, the attainments of the teacher are frequently more than sufficient for the wants of the community by whom he is employed, while in other respects he is often lamentably deficient in all that relates to right intellectual and moral training. A comparatively slender amount of academic lore in our elementary schools, will generally suffice, but not so with regard to other knowledge—that of the human mind, and more particularly of the nacent minds of children. The instructor must be familiar with the best modes for exciting the faculties into activity and of thoroughly exercising the understanding; he must make himself acquainted with the means by which he can best succeed in engaging the attention of his pupils; learn how to beget in them a love for their studies and a love and respect for himself, as well as inform himself of the methods by which he is to aim at in bringing their moral natures under proper training and discipline. He must regard his vocation as being that of one who is entrusted with the important charge of directing the minds and morals of the rising generation. He must have correct views in relation to all these duties, and study how he can best acquit himself of the sacred trust.

It behooves him to acquire this species of knowledge above all others, and to ponder well upon the undertaking he has entered upon.

As to the amount of acquirements in the common acceptation of the word, as understood to mean learning or scholarship, I may be permitted to remark that there is in the world much learned ignorance.

Many accomplished scholars are to be met with, who have but a slender amount of knowledge as to what is the nature and constitution of the human mind; who have had no sufficient intercourse with the world, and who are but little informed in what relates to the duties of a teacher, such as I have here regarded and enumerated them. These, with all their erudition, would make but poor teachers of youth; but, happily that class is becoming much fewer in numbers.

In the dull mechanical routine which is often pursued in some of our institutions, even of high note, and such as claim for themselves no ordinary distinction, much is received passively by the mind of the pupil, in a manner, perhaps, to be retained in the memory, but with which thought will have little concern.

That knowledge can only be profitable which results from a roused state of the faculties, and from the efforts made by the understanding to comprehend and thoroughly incorporate it with the thoughts and ordinary associations of the pupil or student. The teacher, therefore, who is familiar with the best means of exciting thought in his pupils, and can most effectually succeed in stimulating the youthful mind to enquiry, whatever may be his pretensions in other respects, is in possession of one of the prime and most material qualifications of the office.

He will best be able to engage and secure the attention of his pupils to their studies, for they will thus become entertained by as well as interested in them, and that only can entertain which can be well understood.

I have already said more on this particular subject than I at present intended, being one which was introduced here only incidentally; since, however, I have gone so much into its details, I shall have the less occasion to return to it hereafter in future numbers of the Journal; in which I expect to continue my strictures on the general subject of education. I will conclude what I have now further to say regarding the qualifications most desirable in our teachers, by adding the following brief summary. Those to whom we confide the instruction of our youth, should be men not only in possession of adequate intellectual acquirements, but of sterling moral worth. They should have right views of our common nature, and be familiar with the constitution of man, physical, intellectual and moral; know what are the capabilities of their pupils, and be discerning in their different mental characteristics. They should, in short, make *man* their peculiar study.

Let it not be said that the standard here proposed is too high for us to reach; we must, at least, aim to establish and realize it to the extent we are able. The qualifications insisted upon are indeed far other than such as are commonly found, or than such as we can reasonably expect from the insufficient interest taken by the people at large in such enquiries, and the small amount of remuneration generally awarded to the teacher for his labors, as well as from the little respect which is often paid to him in that capacity.

The time is yet distant, it is to be feared, when teachers with the qualifications here enumerated, will be generally found or even sought for by such means alone as will attract them to employ their talents in that line. The occupation of a teacher should, indeed, be raised

to the rank of a *profession*, in no wise inferior to that of law or physic. We should have Normal schools, in which young men should be trained and prepared for teachers, and not be permitted to take rank as such, until they become thoroughly qualified. In the meanwhile, until such is the case, we must seek in every way to elevate the profession of a teacher as at present constituted, so as to create a demand for that class of men who are alone competent to discharge its multiplied and arduous duties, and with the demand, the supply, to some extent at least, will assuredly come.

Having ended my remarks in relation to our *living* teachers, I will take occasion to say a word or two by way of stricture, in regard to the *mute* teachers—our school books—those of them, at least, denominated Readers. While there has been a gratifying improvement made in most other school books within the last twenty or thirty years, those compilations above mentioned, have, in my opinion, deteriorated and, when considered in their adaptation to the wants and uses of children and youth, are inferior to those which were in use forty years ago. There has been a great multiplicity of those reading books published of late years, class upon class, first, second, third, &c., a wearisome and interminable series of productions, the extracts in which, unceasingly repeated, tend only to weaken the energies of the mind.

It has become the fashion to surcharge the books which are got up for the use of children, with didactic matter, such as but few adults can take an interest in, or read with any profit, and which is altogether unsuited to the minds of the very young, for they cannot possibly understand the force and meaning of the sentiments or moral precepts which it contains, and which are undoubtedly intended for their benefit.

This feature in our school books I look upon as a grave defect, and the compilers who so injudiciously make those selections, are men not fitted for the task; they certainly betray an ignorance of the true nature of the child, but little creditable to their discernment. Instruction in reading, when properly conducted, and when the reading books employed are such as to be suited to the tastes and capacities of children, is one of the best mental exercises that can be resorted to—this presumes, however, that the teacher will make his pupils thoroughly acquainted with the ideas intended to be conveyed by the words, and explain to them every allusion.

But the constant recurrence of moral precepts, however excellent in themselves, is only calculated to weary the mind of the child and give him a distaste to his lesson.

The child is influenced by example and imitation, but never impressed by precept, and this is in a great degree the case with those advancing to puberty. The faculties concerned with reason—with sentiment or precept—are the last to be developed, and those faculties, as existing in children, should not, therefore, be tasked too severely, since it is all important that the exercises of the pupil should be made as agreeable and interesting to him as possible. Those faculties can be sufficiently exercised indirectly, and chiefly by an appeal to them through the imagination, by means of narrative, and compositions containing sprightly images, whether derived from facts or fiction.

The old nursery tales, indeed, of "The Babes in the Wood," "Little Red Riding Hood," &c., &c., are preferable to many books which are now-a-days put into the hands of children, avowedly for their instruction, but which in reality are calcalated, for the most part, to produce an effect directly the contrary.

I will not here undertake to point out other defects in the prevailing system of education, many of which present themselves to my mind, but reserve what I have further to say in regard to them for future occasions when it can be more appropriately introduced, and when I can do a fuller justice to the subject by discussing it more at large. I propose by permission of my good friends the Editors, to give to the public through the medium of the "WESTERN JOURNAL" a series of papers containing my views on the subject of education generally, and the present article may be regarded as introductory to those which are to follow, and which I have now in the course of preparation.

I have no new theory or system to advance in regard to education, nor can I make any pretensions to originality in anything which I shall offer, any farther than what the form and manner of it may entitle me to claim. It is my purpose merely to discuss the subject rather by way of enquiry as to what better system can be devised than the one now prevalent. I shall, indeed, give my own views, and explain and illustrate that species of discipline which I conceive will prove most effectual for developing mind and morals in the school rooms, but shall regard principles rather than details. My principal object will be to call attention to the subject, and excite to enquiry, so as to arouse, if possible, the public mind to its importance, that all who are desirous of seeing education advance, may become aware of the necessity there is that they should up and be doing.

Yet I know but too well how powerless are words, written or spoken, upon the minds of the great majority of mankind for effecting a change of conduct, or of views and opinions, even when they proceed from the most gifted of their species. And men will assent to the truth and correctness of many things which they cannot be prevailed on to carry out in practice; they are too indolent, and it is irksome in the extreme to act contrary to their wont—to lay aside old habits and feelings and assume new ones. Reason and argument, therefore, with representations even of whatever good is to result to themselves from any change of conduct, are of small efficacy where habit is concerned and has to be combatted.

But yet there are a few, always on whom our hopes are based, and on whom the desired impression can be made, if the writer or speaker is but earnest enough and will persevere.

I shall therefore persist in urging upon the readers of the Journal to bestir themselves in the cause of education which is the cause of the well-being and happiness of the human race.

I will now only add in conclusion that what I shall advance in future Nos. will not be my own views and sentiments merely, but such as are entertained by and have the sanction of the best authorities, and the most competent judges in every country where the science of education has received the greatest share of attention and made the greatest progress. And the real progress which it has made has been

made under the eye of philosophy by those who have made the nature of man their especial study, while they were guided by the lights of experience.

NO. II.

BEFORE I discuss the manner in which education should be conducted, or say any thing in relation to school discipline, it will be expedient for me, as conducive to a better understanding of what is to follow, to examine and discuss the question, *what is education?* For it has been said that to find our way, before all things it is necessary to know where we wish to go.

I propose in the course of the strictures which I have undertaken to give, to regard the term in its most comprehensive meaning, and most extended application, that in seeking to realize its full benefits, we may be aware of all the objects it behooves us to keep constantly in view. We are not then to regard mere literary acquirements and the intellectual discipline to which we have been subjected in schools, as the sum total of education, but should comprise in it all that is concerned in forming our entire habits of thought and conduct. We should regard it as being that which should commence with our being, and end only with our lives; for while we live, our minds, like the matter which surrounds us, are continually undergoing change.

They never cease to be influenced by the circumstances around us, by the events of our lives, the examples before us, and especially by the difficulties of all kinds which we encounter.

Education then is not according to the popular notion, a something which should commence at a certain age, and end at a certain period, but be continued through life, and from early infancy. In the endeavor rightly to conduct it, we must concern ourselves with the whole man, his physical, intellectual and moral natures. Our efforts should be so directed, therefore, as to procure for these several powers a simultaneous exercise, that they may be developed in perfect harmony with each other. By this means alone can we hope to secure to the individual who is the subject of our training, the greatest amount of happiness which his nature and his situation in life will permit him to enjoy. By this only will he become capable of attaining to any high standard of excellence which may qualify him for dispensing to his species the greatest amount of good. It is necessary, therefore, that the instructor and all others who have the education of youth under their care and superintendence, should be acquainted with the natural laws, not only those which enjoin air, exercise, cleanliness, temperance, &c., which are the conditions of health, and necessary for producing a suitable exhileration of the animal spirits, but the laws of mind also, which regulate our moral nature. Without this species of knowledge, to some extent, no teacher of youth, or others concerned, can be expected adequately to discharge the duties of his responsible station.

Fortunately it is a kind of knowledge not difficult of acquirement, but such as any one may obtain a competent share of, who is desirous

of so doing. If he will only read Combe on the "Constitution of Man," and make himself familiar with the doctrines contained in it, he will not be ill prepared for his duties.

Sana mens in corpore sano, (a sound mind in a sound body,) is a maxim that was current among the ancients, and implies some knowledge of the principles here adverted to, as existing among the people of high antiquity, two thousand years ago.

The mind and the body sympathise with one another; and that the former should be alert, and in a condition to exert its powers, it is necessary that the latter should be preserved in health and vigor by an observance of the physical laws which nature herself sufficiently indicates.

When those laws are disregarded or unknown, which is but too often the case, as well by the parent and teacher as by the too ardent student himself, disease and not seldom premature death have been the penalties exacted by nature, for her violated rights. But whether these fatal results ensue or not, the tendency of a neglect of this nature is certain. Languor of mind will accompany lassitude of body, and the student will often make unavailing efforts at intellectual labor, which he will at all times but ill accomplish. Bodily and mental exercise, therefore, should be frequently alternated, or the mind cannot possibly be in the most fitting state to receive intellectual culture.

Let those then—few though there be—who having a thirst for knowledge, have yet to labor for the perishable things of this life, and lament that they have it not in their power to devote more time to their studies, be consoled.

They are more fortunately situated than many others who have their entire time at their disposal, but who have jeopardised health and life, and most certainly curtailed existence, by neglecting in their zeal for study, to take that exercise which is necessary, and without which, neither body nor mind can long be preserved in a sound condition. Those who are occupied through the day in attending to the active requirements of their callings, will have ample leisure of thought to reflect upon what they have read in the intervals. Their labor will be no material hindrance to thought and reflection; and when their day's labor is over, they will return to their books and their studies with a keener relish, and be saved all the tedium and listlessness which so frequently pursue the professional student into his seclusion, and sometimes render abortive all his efforts at any effective application.

In making the above observations, I speak advisedly, having from experieuce in the course of my own active life, had occasion to remark how very much the disadvantages, as regards the popular objection, "want of time," for acquiriug knowledge, have been exaggerated, and made the *plea* for ignorance.

Work, which to many conveys the idea of something to be endured that is painful or degrading, and therefore to be deprecated, should to a certain extent, be regarded as a necessary part of the education of every youth who is to be fitted for all the duties of life. If generally so regarded, and constituted as part of the discipline of every institution, it would undoubtedly be found highly beneficial, not only in a

physical and intellectual, but a moral point of view also. If I am correct in these sentiments, it becomes a question how far those institutions called manual labor schools, when under suitable regulations, will answer the purpose in view. The results on record of schools organized on this plan; which have been properly conducted, and on enlightened principles, are highly satisfactory and favorable to a repetition of the experiment, particularly the one at Hoffwel in Switzerland, conducted by Fellenberg and others, if I am not mistaken in names and localities, for I write solely from recollection.

The above remarks contain all that need be said on the subject of our physical nature; I will next make a few observations in relation to the moral powers as equally, or still more imperiously demanding our attention in the training or education of youth.

It is necessary for me to do this here, in order to complete the view I am now taking of education as a whole, although I shall hereafter have occasion to treat the subject more at large.

In like manner as the mind and faculties will not act freely only when the physical powers are adequately and simultaneously developed, neither will it act beneficially unless at the same time the moral powers receive their due share of cultivation. Moral training, therefore, should invariably accompany the stimulus of intellectual culture; for unless the youth becomes better as he becomes wiser, his capacity for mischief will but be increased, and that in the same proportion as his mind gains vigor and expansion. Intellectual should always, indeed, be held subject to moral culture. The former is only worthy of being considered of importance as administering to the latter; for the true object of a good education is the well-being of the pupil, in the right formation of his character. When undertaken without this object in view, the results are exceedingly doubtful.

When the moral does not receive equal cultivation with the intellectual nature of man, these two powers are apt to be like two ill matched horses, often drawing in different directions. When the education of an individual has been conducted with entire neglect of his morals, it is more likely to prove a curse than a blessing to him, and he will be apt to become a bane to society; for in this case also, equally as when the physical powers have been neglected, it will be found that nature is not to be defrauded of her dues with impunity, but will avenge her own wrongs in a manner no less signal than in the former case.

The derangements which thus take place, are not the derangements of nature, but produced by man when he refuses conformity to her appointed order; throughout her wide domain everything is established upon the principles of harmony and concord.

Far better would it be for the individual thus circumstanced, and for the community of which he is a member, had he been left altogether in literary ignorance and with faculties unexercised in knowledge; for when thus under no moral restraints, those faculties will certainly be employed in the pursuit of unworthy objects,—in corrupting society, perhaps, and working out evil and not good.

We are so constituted as to be dependent for our well-being upon intellectual and moral advancement, and if we would advance in the

right direction we must study and observe nature—live in obedience to her laws, and regulate our minds according to her dictates.

If we remain ignorant or regardless of her manifest injunctions, we inevitably suffer in mind or in body, for to every infraction of the natural law there is attached a penalty which we have not the power to evade,—a physical one, if the infraction be physical, a mental one if it be mental.

"When our bodies are diseased we feel pain. When our taste is offended we experience disgust. When our moral nature is violated we are conscious of wretchedness. When it is in health, we enjoy a kind of moral gladness, which is nearly if not quite synonymous with self-approbation. Hence from a retrospective view of our conduct, and the sensations we have thus experienced, we derive laws for our future guidance.

When the moral can be brought to act in concert with the intellectual powers there is little danger of unduly exciting the faculties, unless in the case of young children. They will at least not fail to be employed beneficially when thus under the supremacy of the moral sentiments. Their exercise will not only conduce to the happiness of the individual himself, but be employed in promoting the well-being of all who come within the sphere of his influence. And this will be more and more the case as he advances in knowledge and gains comprehensiveness of thought, for he will come to see still more clearly that it is his highest interest to do good and live a purely virtuous life. Intellectual culture, indeed, is of itself favorable to virtue, for it increases the discernment of him who has it and enables him the better to appreciate the consequences of his own conduct. An intelligent community is generally a virtuous community.

Before entering upon any of the details which relate to school discipline, and that the view I am now taking of education in its several parts, may be as complete as the limits to which I am restricted will admit of, I will extend my observations. and make some remarks concerning the true objects we should aim at in giving a literary education at all to our children.

The grand object of education, as admitted by all, is to promote our happiness by enlarging our capacities for enjoyment. The opinion is too prevalent that the possession of worldly good alone—of wealth, and of social and political distinctions—will effect this. The sole aim, therefore, of a great majority of mankind, in the education which they provide for their children, is to qualify them for the business of life, that they may adroitly acquit themselves in the station which they are destined to occupy and be enabled to make the most of the advantages it is capable of affording. This is a great and fatal mistake. They trust to externals for that which it is not in the nature of externals to give. To a certain extent, indeed, they are necessary to our comfort and well-being; but, beyond that, they conduce nothing to our happiness, but more frequently bring with them increased care and discontent.

It is not the gross objects of sense, nor yet any high honors and distinctions, such as are conferred by man, that can permanently satisfy an immortal mind—a being, whose inmost cravings are for something spiritual or intellectual, and such as can never be assauged by anything of a worldly nature.

In a state of simplicity, and before their feelings have become perverted and vitiated by society—such society as is two generally found—human beings possess a taste for all that is good and beautiful, and are capable of higher and more refined enjoyments than any which have their source in material things.

But if not taught early to find pleasure in the energies of thought, in noble and virtuous actions, in refined conversation, in arts and literature, they will be prone to a mischievous activity in trifles, and seek for gratification the indulgence of their lowest propensities. Without intellectual culture, they will only be excited to action by the selfish aims and narrow views of the world around them, and become intent upon mean and unworthy objects. To guard against these consequences, which are incident to an uncultivated mind, should be one of the chief objects of education. In a good education, therefore, something more is comprised than what is usually called useful knowledge, or what may be conceived necessary for affording men the facilities for supplying their more material wants in life; and if we would secure the best results which such an education is capable of affording, we must look beyond the mere advantages, however great in a worldly point of view, which any literary or other acquirements can confer. When education is conducted without any heed to this essential consideration, it may be regarded as a mere *apprenticeship*, undertaken to fit the student for the business of life.

The expression, apprenticeship, as applied here, is borrowed from a book which has many attractive qualities, but which has received less attention than it is entitled to claim; this is "*Biographia Borealis*," by Hartley Coleridge. There is in it a passage so much to my present purpose, that I will here extract it:

"The position is simply this: *A mere apprenticeship is not a good education.*

"Whatever system of tuition is solely adapted to enable the pupil to play a certain part in the world's drama, whether for his own earthly advantage, or for that of any other man or community of men, is a mere apprenticeship.

"It matters not whether that part be high or low—the hero or the fool. *A good education*, on the other hand, looks primarily to the right formation of the man in man, and its final cause is the well-being of the pupil, as he is a moral, responsible, or immortal being.

"But because to every man there is appointed a certain ministry and service, a path prescribed to duty, a work to perform, and a race to run, an office in the economy of Providence,—a good education is always a good apprenticeship; for usefulness is a necessary property of goodness.

"The moral culture of man, and so much of intellectual culture as is conducive thereto, is essential to education. Whatever of intellectual culture is beyond this, should be regarded as pertaining to apprenticeship, and should be apportioned to the demands of the vocation for which that apprenticeship is designed to qualify. A man whose education is without apprenticeship, will be useless; a man whose education is all apprenticeship will be bad, and therefore pernicious in proportion as his function is high, noble, or influential.

"Most of the systems of tuition provided for the subordinate classes have been defective; as aiming either solely to qualify the pupil for his station, or to give him a chance and hope of rising above that station; either to make the man a mere laborer, or to turn the laborer into a gentleman—the discipline or improvement of the man being too often postponed or omitted. The tuition for the higher castes is equally defective, when it forms gentlemen to be mere gentlemen; where it refers the primary duties to the rank, not to universal obligation. Secondly, when it inculcates the acquirement of mental or personal accomplishments as ultimate ends, without reference either to practical utility or to self-edification. Thirdly, when all apprenticeship is omitted, or an apprenticeship given wholly alien from the peculiar, individual, and functionary duties, as e. g., when a scion of nobility is crammed with the arbitrary technicals of professed scholarship, or wastes his time in learning to do for himself what his steward, his game-keeper, or his chaplain could do better for him. Fourthly, where the whole education is subservient to the apprenticeship. This is, perhaps, the commonest fault of all, especially with that unfortunate class, whose education is to be their portion and means of advancement.

"It bears a creditable resemblance of steadiness and industry, it wins the applause of parents and tutors, it makes shining and rising young men, and sometimes judges, chancellors, ambassadors, and ministers of state. But it does not make good men or wise men either.

"Even if it leave the heart uninjured, it keeps the mind unnaturally ignorant; for, viewing all things in an artificial relation to one object, it sees, and therefore knows, nothing in its true relations to man and the universe. The more their knowledge the greater their errors. The greater their command of facts, the more perilously false their inferences.

"They may, indeed, be wise in their own craft, but they are pitiful blunderers where they step beyond it. Be it recollected that we are not speaking of that devotion of time to a professional study which may be a duty, but of that perversion of self-government which makes the profession all in all."

The doctrines taught in the above paragraph differ widely from the notions commonly entertained by parents and others, on the subject of education, which regard only '*apprenticeship.*'

Instead of seeking solely to qualify the pupil for the business of life, these doctrines enjoin upon us the duty of exercising him as much as possible in studies the nature of which are unworldly, and such as may serve to correct in him mere worldly impressions.

But to do what this implies, and counteract, to any considerable extent, the influence of the spirit of the age, may justly be looked upon as a task the most difficult which education has to perform; it is one, indeed, which mere literary exercises, unless in the most favorable circumstances, are inadequate to. The living time, with its thousands of men, and opinions, and actions, has ordinarily more concern in forming the minds and characters of our youth, than has the discipline of schools or the lessons of school books. The living example is opposed to the written precept, and far more forcible for stamping upon

the mind its impressions. "The spirit of the age and nation," says a modern writer, is school and schoolmaster too—seizing on the pupil with its mighty hands, and with its living facts and forces, and with its unbroken unity of doctrine—never ceasing for a moment, but perpetually repeating its lessons.

While, therefore, every thing is to be done for imbuing the mind of the pupil with correct principles, giving him a taste for the good and beautiful, and making him acquainted, as much as possible with his own nature, he should be removed as far as practicable from the influence of evil example, and the contamination of a worldly spirit.

Example is the most efficatious teacher, and we cannot therefore, be too guarded, both as to our speech and conduct, when in the presence of youth.

The education we give unless of a somewhat practical character, cannot be supposed to possess much efficacy. The young require not only to be told and admonished of what they are to do, and how they are to deport themselves, but to be actually exercised in that conduct which it is desired they should adopt. "It has often been said," observes a moral writer, "and requires to be repeated still oftener, that books and discourses alone are not education; that life is a problem, not a theorem; that action can only be learned in action. A child learns to write its name only by a succession of trials; and is a man to be taught to use his mind and guide his conduct by mere precept?

We must seek for the most favorable circumstances in which to place the pupil, that, while endeavoring to engraft upon his mind those sentiments and principles which we wish him to imbibe and cherish, there may be as little as possible in his ordinary associations which can counteract their influence. If we can succeed in this, and he is under the guidance of enlightened counsels, and with a competent instructor, his proper education will be an easy task.

The present age is too much characterized by half scholarship and superficial attainments; the information generally obtained is imperfect and therefore often erroneous. The surface of education has been greatly extended, and, as a natural consequence, it has lost in depth what it has gained in lateral extension. This is attended with serious evils and verifies the lines of Pope, so often quoted, that "a little learning is a dangerous thing," &c., it engenders pride, conceit, and self-will.

The education of the great majority in this country, even of those who make pretensions, is, it must be confessed, very imperfect; not so much, indeed, for want of schooling—which can only lay the foundation—as of subsequent cultivation. Education, and the formation of the mind and character, must, in great part, be the work of each individual himself, but the self-discipline necessary for the task is too seldom undertaken.

After college life is passed, politics or the pursuit of gain soon come to engross the mind; defeat perhaps the half formed intention, and take away all desire for improvement.

I will venture on this subject to extract from the "Democratic Review," the following sentiments of an American writer, as follows:

"The great mass of our American people can read, and do read the

newspapers, and many other things; and all of them fancy themselves competent to sit in judgment on all matters human and divine.

They are equal to the profoundest philosophical speculations, the loftiest theological dogmas, and the abstrusest political problems.

"Filled with a sense of their own wisdom and capacity for sound judgment, they lose all teachableness, and are really in a more deplorable state than if they made no pretensions to general intelligence."* If the minds of American people be really in the condition in which this writer here represents them to be, or even should one-half only of his inculpations be correct, then, truly, it is high time that we bestirred ourselves to produce a better and more reputable state of feeling and intelligence. Nothing can produce this effect but an improved system of education, founded upon enlightened views and properly regulated and enforced under the patronage and with the support of government. With such a system, and the aid of all well-wishers to the cause, we should soon have it in our power to give a very different account of things.

ART. IV.—RELATIVE VALUE OF STONE COAL AND CORD WOOD.

Our enterprising correspondent, H. Smith, Esq., of Louisville, has furnished us with a communication from Professor Walter R. Johnson, of Washington City, containing estimates of the relative value Cannelton coal and cord wood, for the use of steamboots; and also, a letter from Capt. John Carlisle, giving an account of an experiment made by him in the use of coal on the steamboat Marshal Ney. This is a subject of immense importance in the economy of the country, and we trust that the talented and enterprising commanders of steamboats on the western waters, will severally institute a series of observations in regard to the relative value of stone coal and cord wood. For whatever is gained in the cost of fuel, is so much added to the wealth of the country, and will enure to the benefit of the agriculturalist as well as the carrier. Professor Johnson says:

"In recurring to the report on American coals, (page 553, column 4th of the table,) you will observe that the coal of Cannelton, Indiana, (which, until further trials are instituted, we are compelled to assume as the type of western coals,) gave per *cubic foot of fuel*, in the state in which it is delivered to the grate, 348.85 pounds of steam generated from water at 212 deg., while a cubic foot of dry pine wood, as measured by the cord, gave 98.58 pounds of steam from 212 deg.

* O. A. Brownson.

"From this it appears that in filling a *given space* on board the boat with *fuel*, the choice between Cannelton coal and dry pine wood or other wood having an equal evaporative power, under the same bulk should be made in part with a view to the stowage room, which they respectively require for the same effective power. Now, 348.85: 98.58::3½:1, which shows that filling equal spaces, with the two kinds of fuel, the lengths of trips which could be made without replenishing, would be *three and a half times* as great with the coal as with the wood. I suspect that much of the wood used on western boats is, to say the least, not better, cord for cord, than dry pine wood. If used in a green or unseasoned state, the inferiority of wood must be still more marked.

"I suppose that *space* for the stowage of freight is one thing to be economized on board a steamboat, even supposing the same amount of evaporative power could be had for the same money. As coal in the west is sold, I believe, by the bushel, of which I infer from my experiments, *thirty* will make a ton, measuring forty-seven cubic feet, and wood by the cord of 128 cubic feet, and as by page 547 of report, a true cord of dry pine wood weighs 2689.2 pounds, the calculation of the value of coal per bushel, according to the actual cost of wood per cord, is easily made. Thus, 47 multiplied by 3½, the evaporative power of 1 cubic foot of coal, gives 164½ as the relative value of a ton of coal, and 128 multiplied by 1, (the relative evaporative power of wood,) gives 128. Hence, 30 bushels of coal ought to be worth 164½-128 times, or say 1 28-100 times as much as a cord of wood. From this it will easily be computed, that if stowage room were of no account—labor in handling of no cost—time and the danger of frequent stoppages of no consideration, and the unequal character of wood obtained at different points, no source of annoyance—but the mere first *cost* of wood and coal were the sole criterion by which to judge of their *value*, then the following table would represent the value per ton and per bushel of coal, as compared with assumed prices per cord of dry pine wood, or its equivalent:

Supposed price of wood per cord.	Value of coal per ton of 2240 lbs. or 30 bushels.	Value of coal per bushel.
$1 50	$1 92	6.4 cents.
1 75	2 24	7.5 "
2 00	2 56	8.5 "
2 25	2 88	9.6 "
2 50	3 20	10.6 "
2 75	3 52	11.7 "
3 00	3 84	12.8 "
3 25	4 16	13.8 "
3 50	4 48	14.9 "

Captain Carlisle, writing from New Orleans, on the 6th of January, 1848, says:

"I have the pleasure of reporting to you the following very favorable result of the experiment made on board the steamer Marshal Ney, on her first trip to New Orleans from Louisville, to test the compara-

tive economy in the use of wood and coal for steamboats. On leaving Louisville, I had on board only 10 cords of wood. At Frank O'Hara's wood yard, we took on board 15 cords of drowned wood, with which we found great difficulty in making steam, till we obtained some of your coal at Cannelton, to aid in burning it. At your coal banks we took on 2,100 bushels of coal; we subsequently took 15 cords of wood at Columbus—10 cords at Commerce—37 cords at Napoleon—40 cords at a wood yard below Vicksburg, and 30 cords at Mt. Pleasant—making in all 147 cords. On my arrival at the levee in New Orleans, we had remaining unconsumed about 45 cords of wood, and over 600 bushels of coal, making the actual consumption of the boat, carrying near 1,000 tons of freight, in a long passage of near nine days, only about 102 cords of wood, and 1,500 bushels of coal.

"The experiment was made under very unfavorable circumstances, as the boat gathered nearly all of her cargo in small lots, at numerous points along the river, and was obliged to get up steam and put out her fires at every stopping place, or allow them to burn for hours when she was not running, which increased her consumption of fuel, and added near two days to the length of her trip. We left Louisville immedialely after the subsidence of the high water, in December, and the wood everywhere on the Ohio river, and for some distance below the mouth, was wet, and unfit for use, and required more than an ordinary quantity of coal to aid its combustion. Comparing the consumption of fuel by the Ney, even under these unfavorable circumstances, with that of my former boat, the Harry of the West, with the same power and engines, I estimate the saving of fuel in the use of your coal instead of wood, to be more than 30 per cent., taking the average price of wood for the trip to be $2 50 per cord, and the price of coal at 7 cents per bushel. When another opportunity occurs, I intend to make another experiment of the comparative expense of wood and coal for steamboats, and will communicate to you the result of the tests made under more favorable auspices. I found your coal formed no clinkers, nor did it obstruct or injure our grate bars.

"Your company and others would confer a great benefit on that important branch of commerce in which we are engaged, by forming depots for your coal at convenient points on the Mississippi and lower Ohio, where we could get a daily supply as we passed, and as we needed it.

Respectfully,

JOHN CARLISLE,

Captain of Steamboat Marshal Ney.

ART. V.—BUILDING AND BUILDING MATERIALS.

BY B. A. ALDERSON, OF MISSOURI.

The ill-effects which flow from the errors committed by those who have preceded us, may extend down through a long course of time; but, when they become known, and the source from which they emanate detected, it becomes our duty when in the possession of such knowledge, to make it public for the benefit of our fellow-men. With this conviction of duty, I feel that a few remarks on the nature and quality of materials, and the manner of combining them in the construction of buildings, may not be irrelevant to those engaged in the erection of dwellings, store-houses, &c., especially to those who build but once in a life-time, and only begin to learn, at the completion of their improvement, what should have been stipulated in the contract at the commencement of the work. It is for such that I write, and not for adepts in the business.

Many persons, who have supposed they were getting substantial walls erected, have been much imposed upon. For instance, I have known workmen in the country to contend that mortar, in order to work to advantage, and not set too quickly, must contain a portion of loam or other extraneous matter; and this paste—which we may justly denominate *mud*—being put on in layers of unreasonable thickness, and exposed to the pelting rains and rushing tornadoes—has caused greater destruction of property than perhaps all other evils combined. Prices paid for work are, or should be, such as to justify its being well executed; and proprietors of buildings should be able to judge when work is being done in a substantial manner.

The clay for brick should not contain so much sand as to render them heavy and brittle, but sufficient to prevent shrinkage and cracking in the burning. That the brick may not crack when laid out to dry, no more water should be used than is necessary to give to the paste a proper consistency. A very effectual and regular method of mixing the materials, is by passing them through what is called a pug mill.

In burning, the fires should not be rushed until the steam shall have entirely passed of. The best brick may be known by their clear sound, red color, and when broken are found to possess a fine, compact texture.

The quantity of lime required for good mortar is just so much as will fill up the interstices between the particles of sand; and experience has proved that this end is most generally gained by using one part of good common lime, and two parts of clear, sharp sand. Should the sand contain impurities, it may be cleansed by passing it through several waters. Owing to the great avidity bricks have for water, thin tempered mortar is the best, as it does not dry so quickly, and

makes closer joints. The amount of mortar used should be only so much as will keep the bricks out of contact.

The "Flemish bond" is the most common for thick walls, and should have every fifth or sixth course headers. In building a nine inch wall, as it is termed, a good means to prevent the damp from penetrating to the interior, is to leave a space of one inch between the longitudinal layers of brick, thereby forming, as it were, two separate walls, and bind them together by each course of headers. This is said to make equally as strong work as the ordinary method.

In order to prevent the walls—especially the corners—from cracking, all parts of the building should be carried up regularly at the same time. What is called toothing, should not be allowed; but, when a corner is to be raised, give it sufficient base on each wall, so that each line of slope shall correspond to the hypothenuse of its respective triangle—which triangles are equal.

In building the jams and chimneys, very substantial and beautiful mantles may be worked in of solid brick-work, showing the columns and all of the projections to suit the fancy of the architect, and then finished off with cement. They are truly very neat and substantial; and, after completed, there is no danger from fire.

Measuring the brick-work of a building is another thing at which many proprietors cut their wisdom teeth, when too late to do any good. The contract is generally to lay the brick at so much per 1,000; but, when it comes to measuring, the mason contends for the corners being measured twice, and says it is custom; so of the plasterer, who does his work at so much per square yard, counting the openings one-half; but, when it comes to measuring the work, to the astonishment of his employer, claims the space occupied by the washboard and all door and window-casings, at full price! and if objected to, claims it as a matter of custom. Now, it appears to me that these customs are perversions of the language of the contract, and unjust—especially as regards the washboard, which should by no means be included in the estimate of work performed; for, if the washboard were left off entirely, then the plastering would, of necessity, be joined to the floor, requiring more labor and pains, at the same charge. Being governed by custom, which is known to but one of the parties, in estimating work, instead of the strict letter of the contract, not unfrequently produces unkind, but even bitter feelings between the parties.

As regards the permanence of a building, much depends upon the carpentry; for a bad piece of carpentry may, of itself, destroy the best constructed brick walls that can be reared. I once saw a costly building erected for a hall of science, and under the eye of science, which three years afterwards was literally being torn in pieces by the defective carpentry; and this injury consisted principally in placing the upper tier of naked flooring transversely of the rafters, and allowing the feet of the rafters to rest on the wall-plate, without being connected, by substantial tie bearers.

This was contrary to all rules of mechanism, as the upper joists should always be in the same direction as the rafters, so that each joist may act as a tie beam. Great injury is frequently sustained by the use of green timber. Where the span is too great for one contin-

uous joist to reach entirely across, let one or more girders be used, as the case may require, and so connect the joists that each may bear a part in counteracting the outward thrust of the roof.

The practice of occasionally sawing large girders down the middle, reversing the pieces, and bolting them together again, is very well—as an opportunity is thus afforded of detecting any defects in the centre, and at the same time it has a tendency to equalize the strength of the beam. A defective beam may, by this operation, be strengthened; but a perfect piece of timber would be rather weakened by the operation of cutting and boring holes for the pins. The practice of cutting girders down the middle, is of very ancient origin, and is generally attributed to Vitruvius; who directed that a space be left between the beams for forming the architrave over columns, in order to prevent their decay; and for this reason, no doubt, girders were first ripped.

When a truss frame is used to increase the stiffness of the girder, thin pieces of metal may be inserted between the ends of the braces and shoulders in the post and upper side of the girder. These will assist in retaining the frame in its original position, by preventing the fibres of one piece from entering into the interstices of the other.

The outward thrust being inversely, as the angle of elevation of the roof, unless the feet of the rafters be well secured, the danger of forcing out the walls is very great; and particularly so, if the roof be massy and of small pitch.

The pitch of the roof is a matter of greater moment than it generally receives at the hands of the builder or architect. In a climate where the roof will never be burdened with a heavy mass of snow, the rise or pitch need not exceed *two-ninths* of the span; and more particularly so, if the covering be of slate or any other kind of metal, as it would not be so much of an object to have the rain run off quickly, to prevent decay from damp, as if the covering were of wood. The pitch recommended by Paladio, in Italy, was twenty-four degrees, being nearly two-ninths of the span.

In the roof of small pitch, as recommended, we not only add to the beauty of a building, but also add greatly to its security against storms, and the destructive action of the terrible tornado. This security is gained by there being a less surface exposed to the action of the wind, which I think can be proved to the satisfaction of any one who will examine the subject.

In a table, derived from the experiments of that distinguished engineer, John Smeaton, we find it recorded that wind, at a velocity of twenty-two feet per second, which is equal to fifteen miles per hour, causes a pressure on each square foot, vertical, of 1,107 pounds avoirdupois; and this result has been fully confirmed, and it would seem entirely settled, by the experiments of the Çhevalier De Pambour, made while in England, with a view to ascertain the amount of friction, &c., of locomotive engines and their trains, and also the amount of resistance offered by the atmosphere on a perfectly calm day. The result of his experiments was, that a car, moving at the velocity of twenty feet per second, equal to thirteen and six-tenths miles per hour, met with a resistance from the atmosphere, for each square foot vertical, or front, of 0.915 pounds.

In the same table of Mr. Smeaton, as already referred to, we find it recorded that wind, progressing at a velocity of one hundred miles per hour, which is equal to 146 and 7-10 feet per second, produces a pressure of 49 and 2-10 pounds per square foot, and will overturn trees and buildings. The greatest velocity of wind on record, which I know of, is that related by M. Rochou, which was at a velocity of 109 miles per hour; and its force against a perpendicular plane of one foot area, was estimated at fifty-eight pounds and 45-100; so that the tornado of May 7th, 1840, which laid in ruins one of our southern cities, could not have produced a pressure of less than about 60 pounds per square foot vertical.

It may now very readily be shown what a decided advantage roofs of moderate elevation possess over those of great pitch. Let us take, for example, a roof of 40 feet span, and the pitch 2-9; and another of the same span, with a rise or pitch of 1-3, as is most usual; the gable end with the rise of 2-9 the span, would give, in round numbers, an area of 177 feet, while that of the 1-3 rise would give an area of 264 feet; their difference is 87 feet, which, multiplied by the pressure per vertical square foot—60 pounds—gives a product or strain of 5,220 pounds greater against the gable end of the 1-3 rise, than acts against the one with a pitch of 2-9 the span. There is, again, an additional force exerted on the face of the high roof, over and above that of the pressure against the sides of the low one.

A fine opportunity is now afforded by the telegraph, in different parts of the country, to ascertain the velocity of storms; but I have no distinct recollection at this time of any observations of the kind having been published. Such observations would be of great interest to the scientific and curious.

ART. VI.—AGRICULTURAL.

THE CULTIVATION OF SUMACH.

BY GEO. B. DAVIDSON, ESQ., OF ILLINOIS.

The only effectual method of preventing the importation of such commodities as can be cultivated or manufactured at home, is to produce an article of equal quality at an equal price. This has already been accomplished to a limited extent, so as to do away entirely with the importation of certain articles from other countries. No one thinks of importing wheat or flour into the United States, for the reason that wheat and flour of home production, can be had at such prices as to prevent the importer from realizing any profit; consequently, the importation of such articles is the same as prohibited; and this principle will hold true with respect to every article raised or manufactured

in the country. Whenever the importer ceases to realize a profit on any article, from that moment its importation ceases. And on the other hand, there is no article from the importation of which a profit can be realized, but is sure to find its way to our shores, no matter to what extent the same article can be produced in this country. The primary—and we might add only—object of commerce is gain; and whatever good society at large may derive from it, is merely incidental. Capital is extremely selfish. Rarely, if ever, is it invested for purposes merely philanthropic, or simply with a view to the general good of society. Yet such is the connection between cause and effect—so constituted is society by a wise arrangement of nature—that no matter how selfish soever the purposes on which it is employed, it seldom, if ever, fails of producing some good. I do not mean to be understood as opposing the investment of capital in commercial enterprises. On the contrary, we regard an extensive and well regulated commerce as evidence of a nation's greatness. Yet it has its bounds, and if these are passed, it prevents the development of the resources of the country, by absorbing too much of its capital. For this reason it is important that the mind of the nation be not allured by its splendor. It is too much to tax ourselves for its support, and the support of foreign countries, at the expense of leaving untouched and unexplored, the inexhaustible resources of our own. It may seem inexplicable, that iron should be imported into the United States, when she has, in her own bosom, inexhaustible quantities of that useful metal. But so it is, and so it will be, until capital can be profitably invested in that branch of business, If iron were manufactured in the United States of as good quality, and at as cheap a rate as that imported from Europe, no profit would accrue to the importer of the foreign article; consequently, its importation would cease, which would be a great saving of capital to the country, besides furnishing constant employment to a great number of hands. And if this branch of business could have been prosecuted with as little ready capital and skill as is necessary to commence farming, the hardy pioneer, who has brought the wilderness to fruitful fields, would doubtless, long ere now, have brought it to a point that would have rendered unprofitable the importation of foreign iron.

These remarks may seem desultory, considering the special purpose of this communication, which is designed to call the attention of agriculturalists to a plant which is imported into this country in large quantities, at a high price, and which, we verily believe, would amply remunerate the American farmer, should he be induced to undertake its cultivation—yet, as we intend continuing our communications, they may serve as a general introduction.

The plant referred to is *Sumach*, a shrub indigenous to this country, and grows wild in almost every part of it. It is a well known plant, and in some parts of the country is used in dyeing, and we believe it is used as a medicine in Thompson's system of practice. But the business in which it is most extensively consumed, is in tanning morocco leather—it being the principal article used for that purpose. It is with a view of inducing the farmer to raise a supply for this demand, and secure to himself this source of wealth, that we have directed his attention to the subject. We have no means at present of ascertaining

the quantity of sumach annually imported into the country, but judging from the quantity of morocco leather manufactured, the quantity must be considerable. But no matter how small the quantity, when it can be produced at home it ought to be.* We draw our supply at present from Sicily, where it is principally cultivated, and where, it is said, the best quality is produced; if mixed with American, however, it is better for tanning. Let the intelligent farmer ask himself what advantage Sicily has over the United States. If he can find no satisfactory answer, which we opine he will not, let him resolve on the cultivation of sumach, which, doubtless, will be profitable to himself, and add an important feature to the independence of his country. Sicily lies between 37 and 39 degrees of north latitude, and if she can raise to export, surely the United States, extending south and north of these lines, can raise sufficient for domestic purposes.

The price of sumach at New York, at present, is from $55 to $60 per ton. What quantity could be raised on an acre, we are not aware, but we think when it is once properly tried, it will far excel in value a crop of wheat, corn or potatoes.

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*We extract the following paragraph from the Patent Office Report, for the year 1845: "It is stated in the American Agriculturalist, that during the year 1842, 10,000 bags, equivalent to 700 tons of sumach, nearly one-twentieth of the home consumption, have been sent from the south, principally from Virginia. The writer says that such as can be raised in South Carolina, Georgia, Alabama, and more particulaily Florida, would be of better quality. It should be gathered as soon as ripe, and planted soon, so as not to become too old. This is said to be an important fact for southern planters; for, by planting the seed, and mowing down the shoots three times annually, they might obtain from three to five tons per acre, with much less expense and trouble, than by gathering and bringing home the natural growth, scattered extensively over the country. The sumach is perennial, and when once planted would last for ages--the crop when sown, annually increasing, until the ground becomes full of roots. In the same Journal for September, 1843, may be found an article on the cultivation of sumach, with the time for cutting, and of preparing for the market." We have no statistics in our possession showing the quantity of sumach annually imported into the United States. We infer from the remark in the commencement of the foregoing extract that the annual consumption in the United States is about 15,000 tons, and it does not appear that any is prepared for market north of Virginia. At $50 per ton, this would amount to $750,000, equal to about one-third of the value of the hemp crop. We are, however, inclined to doubt the inference authorized by the foregoing extract from the American Agriculturalist. We learn from a table of imports into the United Kingdom, published in the Patent Office Report for 1845, that the quantity of sumach imported into Great Britain for ten months ending on the 5th November, for three years, was as follows: In 1843, 11,033 tons; in 1844, 7,732 tons, and in 1845, 9,328 tons.

We are pleased that our correspondent has brought the subject up for the consideration of the farmers of the west, and trust that some of them will be found sufficiently enterprising to make an experiment. There is, perhaps, no other country in which there is so great an over-production of the leading staples, and the introduction of a new article for commerce may be considered as so much gained to the wealth of the country.—[EDITORS.

LIBERAL PREMIUM TO WINE GROWERS.

We invite the attention of our readers to the premiums offered by our enterprising and public-spirited citizen, ALEXANDER KAYSER, ESQ., for the best specimens of wine, to be produced by the farmers of Missouri, in the present and the two next succeeding years. Although requested not to treat the matter as evincing any degree of liberality on his part, yet we may be permitted, in behalf of the farmers of Missouri, to thank him for the undoubted evidence thus given of the interest which he feels in their prosperity.

This is, we believe, the first substantial encouragement that has been given to grape growing by any individual in Missouri; and we trust that this fact will be remembered, and perpetuated by an appropriate denomination of the best specimen of Missouri wine, produced from the vintage of 1852.

ST. LOUIS, MARCH 2d, 1849.

To the Editors of the Western Journal:

GENTLEMEN:—Enclosed be pleased to receive an advertisement to the farmers of our State, offering them certain premia for wine to be grown by them. The same is at your disposal, if you should deem it worthy your own and your readers' notice.

I trust you will not treat the matter as evincing any degree of liberality on my part. I am far behind most of our fellow-citizens in useful, though, perhaps, more private undertakings; and as far as the farmers are concerned, I am returning them but a penny for their pound.

The manner in which I interweave questions of State and morals, with a subject of agriculture, cannot appear strange to you, who are used to draw lessons of morals and ethics from every work of the Almighty. To you, the pagan worship of Ceres denotes one grand and important step in civilization, beyond the time when Apollo's twin sister, Diana, sped the arrow at both game and men.

I am your obedient servant,

ALEXANDER KAYSER.

TO THE FARMERS OF MISSOURI.

Believing that you have already proven the adaptation of our State for the culture of the grape—hoping that the industrious farmer, in his secluded dale, will take it kindly, when our city notices his civilizing efforts, and by the vine of reciprocity slings him still more strongly to its magic growth—calculating that, by the cultre of the grape, our State may annually retain and earn many ten thousands of dollars—learning from history that the grape diminishes the use of spiritous liquors, and truly advances habits of national temperance.

I have concluded to obtrude myself on your notice, and in following up a former essay, to offer you a series of three premia for the best wine to be grown by you in the present and two next succeeding years.

The awards will take place in the fore part of the respectively succeeding years Mere dilettant wine growers are excluded from a participation in the premium, since my object is to encourage *those* who make the growth of the grape one of their regular *livelihood* pursuits. Competent men I perceive consider the matter no more problematic, and hence I address myself to the man who himself plants the vine, hoes the soil, gathers and presses the grape, and pockets his ringing dollars for the sweat of his brow. Care will be taken to surround the competition for the premia with reasonable safeguards. Experienced persons will be selected as awarding committee, and all necessary details will be timely published. If I could at present afford it, I would offer a prospective premium for the best native almond and the best re-claimed or ennobled hickory or walnuts. I think that the time is not far off, when the country of the setting sun will likewise, as far as genial fruits are concerned, enter into competition with the Levant; and, inasmuch as the man who gives, has the right of prescribing the condition of his gift, I propose to add some thorns to my roses; but I trust that, upon reflection, the good farmers will be convinced that those thorns will only sting certain people. The intelligent, upright farmer, and if his hands were as delicate as those of his blooming daughters, need not to fear them.

The conditions, then, are these:

The premium wine grown in 1849, (premium of $100, to be awarded in 1850,) is to be called or branded forever "*The Ore Blossom*," so that the drinker may be reminded of the rich iron, lead, and copper ores, wherewith Missouri's hills are pregnant, and of the metallic currency principles, with which Missouri's great statesmen are laying the *moral* basis of that wondrous national commercial greatness, which will reduce foreign navies into mere flotillas, and yet free us from the effeminate demoralization which generally attends commercial greatness.

The premium wine grown in 1850, (premium of like amount, to be awarded in 1851,) is to be branded "The Viaticum," meaning thereby the allowance which every tasty Oregon, California, or China traveler will take whilst he whirls over our great national railroad, or the good farmer, whilst with his team he moves along the margin of *the road.*

The premium wine grown in 1851, (premium of $125, to be awarded in 1852,) is to be branded "*The Free Soil Florescence*," for the reason that about and after the time of its growth, nurses will no more scare their nurslings by the threat of nullification.

To secure the safe rendition of the premia against all accident of death, or otherwise, I have placed the necessary securities in the hands of my two valued fellow-citizens, Messrs. O. D. Filley and Adolphus Meier.

ALEXANDER KAYSER.

GRAPE CULTURE IN INDIANA.

We gather the following information relative to grape culture in Indiana, from a letter of Amos Goodwin, Esq., of Charlestown, Clark county, Indiana.

Mr. G. estimates the number of acres in vineyard in Clark county, at 100 to 120, exclusive of small portions cultivated for family use, and is of opinion that the quantity will be doubled in two years.

Taking his own vineyard of eight acres for a sample, the vines yield an annual average of about 200 gallons of wine, principally, in fact, entirely Catawba, which, as a wine grape, Mr. G. thinks has no equal. He cultivated a few Isabellas, but not for wine.

His method of cultivation is, after the ground has been properly

prepared, to set the vines in rows, six feet apart one way, and four feet apart the other. He trains them on trellises, made by setting stakes five feet and a half long above the ground, and nailing to them strips of boards. He has tried wire trellis, but found that the sun heated the wire to such a degree, that, besides killing the tendrils, it did great injury to the young wood. His vines succeed best on the highest lands. In this the experience of his neighbors accords with his own. The early frosts seldom injure the young shoots except in low grounds.

He does not ferment his own wine, but sells the "must" to the vintners, at prices ranging from 60 to 80 cents the gallon, making the average proceeds $140 per acre. This is certainly much better than grain growing. He estimates the labor necessary to cultivate an acre in grapes, as only twice as much as required for an acre of Indian corn. The wine crop of ten acres in vineyard would be worth about $1,400. The corn crop of 20 acres, requiring the same labor, not more than $250.

We concur with Mr. G., that this difference in the profits of culture cannot last many years. Vineyards are rapidly increasing throughout the country; the price of wine will fall. Yet there is every inducement to continue, and nothing to discourage the multiplication of vineyards in the west. Every successful vineyard is an advance towards universal temperance in the use of alcoholic beverages.

Mr. Goodwin describes a method of grafting vines, which is new to us, and will be so, we presume, to the majority of our readers. He cuts off the old root with a horizontal cut, some two inches or so below the ground. He then takes a gimlet the size of the cion to be inserted, and bores perpendicularly, from one to four holes, two or three inches in depth, according to the size of the root into which he inserts the cions, the loose bark having been first removed. The cions should fit accurately. This method, he says, has been with him universally successful.—[*Valley Farmer.*

TEA CULTURE IN THE UNITED STATES.

At a meeting of the New York Farmers' Club, on the 16th January, Mr. Meigs read extracts from a letter by Mr. Junius Smith, dated Greenville, S. C., on the 29th ult., giving further particulars of his success in introducing the plant into this country. He observes that on the 14th of last month he planted out the tea seed which he had taken to the Southern States; and on the 26th he planted out the first tea shrubs ever cultivated in the United States for agricultural and commercial purposes. Several of the plants opened out on the 28th, and were in full bloom, with their leaves fresh and green, as if growing in China; others with the blossom-bud just showing its snowy bosom. We may, therefore, say, continues Mr. S., that the tea plant is in blossom in South Carolina.

Mr. Smith observes that he is delighted with that part of the country as a tea growing district, and thinks the soil, climate, &c., most desirable for that purpose.—[*Valley Farmer.*

CULTIVATION OF THE STRAWBERRY.

The result of the following experiment, the first of the kind in that section of the country, was given at the request of the editor of the New York Farmer and Mechanic, by Mr. C. H. Starr, of Groton, Connecticut, who has been engaged some four years in his experiments, and has succeeded in producing some strawberries of unsurpassable fineness.

The varieties raised were Hovey's seedlings, with a few English plants as fructifiers, and were set in April, in rows three feet apart.

The soil was a moist loam, half an acre in extent, well pulverized, by plowing, and manured at the rate of 20 cords to an acre, of sea weed and fish. The first year, beets, or other vegetables might be grown without detriment to the fruit.

The product from the half acre under cultivation, last season, was 2,000 quarts of fruit, some of which measured 4½ inches in circumference.

ESTIMATED EXPENSE OF CULTURE PER ACRE.

20 cords of manure, or its equivalent,	$40
Expense of plants, 10,000 at $2,	20
Total expense of labor the first season,	100
Total expense incurred the first year,	$160
Total expense (labor only,) second year,	160
" " third year,	160
" " fourth year,	160
	$640

VALUE OF THE CROP.

50 bushels of beets the first year,	$20
4,000 quarts of strawberries the second year,	
4,000 " " third year,	
4,000 " " fourth year,	
12,000 quarts of strawberries in all, at 12 cents	1,440
Total value of the crop for four years,	$1,460
Leaving a nett gain for four years of	$820
Or for each year,	205

The above is simply what has been done in the ordinary culture, without eny particular effort or extra exertion, and we have no doubt the crop could be still further increased by improving the variety, and with a better opportunity of selecting the soil and varying somewhat the kind of manure.—[*American Agriculturalist.*

COMMERCIAL LAW CASES.

Hyde & Oglesby vs. Steamer Yazoo, et al.

This case presented to the Supreme Court a question of privilege. The facts of the case are as follows: Morrison & Co., of New Orleans, sold the steamer Yazoo to John Culver, on the —— day of May, 1847. On the 2d day of August, 1847, Culver, who was yet master and owner of the boat, which was then lying in the port of New Orleans, borrowed from Hyde & Oglesby the sum of $1,200 cash, for which he, Culver, gave to Hyde & Oglesby his draft on himself, payable in St. Louis, for which port the boat sailed on the day of the loan. Culver accepted the draft in St. Louis, but never paid it. On the 17th of August, Culver, then being in St. Louis, sold the "Yazoo" to John Eaton. On the 14th of September, Eaton, through his agent, sold the boat to Messrs. Hunt & McDonough, who brought the boat to New Orleans in October, 1847, where she was seized by the plaintiffs, who claimed to be paid the amount of their loan, by privilege and preference over all other creditors.

Messrs. Hunt & McDonough appeared, denied indebtedness to plaintiffs, and claimed the boat as their property, averring that plaintiffs had no privilege on the boat for restitution of the money advanced by them to Culver for the purposes of trade. On this issue the parties went to trial, and the District Judge was of opinion that article 3,204 of the Civil Code gave plaintiffs a privilege. Plaintiffs had judgment and privilege on the boat, from which judgment Hunt & McDonough appealed.

The Supreme Court, acting under a very clear article of law, and a number of cases cited by defendant's counsel, rightly concluded there was no privilege whatever on the boat for the payment of plaintiffs claims; the settled principle being as follows: That advances made to a captain or owner of a vessel in her home port, even though that money be applied to the payment of privileged claims, gives no privilege to the lender. In the case of the Agricultural Bank vs. bark Jane, it was held by the Supreme Court, that although a party paid the privilege claims against the vessel himself, he had no privilege, because he did not take a special subrogation from the original privileged creditor. The reason of that decision is this: privileges are *stricti juris*, and can only be enjoyed when they are pointedly given by law. Great caution should be observed by merchants in their transactions with vessels. The law that gives a privilege on the vessel for advance, has its origin in the necessity of preserving and protecting commerce. Thus, when a vessel is on her voyage, and meets with accident by which she is distressed, it may be necessary for the preservation of the vessel and cargo, to obtain an advance of money, in order to enable her to proceed on her voyage. This would be a difficult matter—the vessel being in a strange port—if it were not that the law has provided for the exigency, by giving to the lender, under

such circumstances, a privilege on the vessel for the restitution of his loan. The law also permits the captain of the vessel—who is agent of both owner and consignee, or shipper—to *sell* freight, if the safety of the vessel and cargo demand it. The same principle governs in marine law, which provides that every thing must yield for the general safety. But in all these extreme cases, the vessel must be abroad, for it is impossible that any such exigency could arise in the home port of the vessel. It was not necessary for the Court to determine what causes destroy privileges on vessels, because the claim of plaintiffs never enjoyed any. The article of law under which the District Judge gave plaintiff a privilege, reads as follows. Civil Code, Art. 3,204, ¶7: "Sums lent to the captain for the necessities of the ship *during* the *last* voyage, and reimbursement of the price of merchandise sold by him for the same purpose."

In this case the vessel was *not on a voyage*, but lying safely in her home port, when the money was loaned. The only other word of law to be found in our code, giving a privilege on the vessel for money advanced, is to be found in the ninth paragraph of the same article of law above quoted, which reads thus: "Money lent on bottomry for refitting, victualling, arming, and equipping the vessel, before her departure." In the present case there was no loan on bottomry; it was a loan on accommodation and friendship, and not on a bond. Plaintiffs took a draft for restitution. A lender on bottomry has the vessel hypothecated to him as security. In this case the vessel required no "*refitting;*" her captain wanted a loan to pay debts on his boat, for which she was liable to seizure. The plaintiffs have been unfortunate, but it must be borne in mind that they might have made themselves secure by obtaining from Culver a transfer of his freight list, which they could have sent to St. Louis, and thereby collect from the various consignees, freight money to the amount of their loan. This was not done, and Culver was permitted to collect his own freight, and allow his acceptance to go to protest.

All these facts, and the law bearing upon the case, are clearly and forcible presented in the opinion of the Court, which does not shake any previous rule of decision on the subject of privileges, but more clearly defines the rights of parties under existing laws and numerous decisions. The judgment of the District Court was reversed at plaintiffs' cost.—[*N. O. Crescent City.*

RAILROAD TO THE PACIFIC—SENATOR BENTON'S BILL.

With the present number we close the very able essays "on Eastern Commerce," by J. Loughborough, Esq., of Missouri; and now we respectfully request of our readers to take them up, commencing with the December number, and read them all in connection. These articles evince great research; and, where the subject admitted, are written in a spirited and pleasing style. Considered as a literary

performance, they are calculated to place the author in the first rank of American writers.

In connection with the subject, we publish the following extract from Senator BENTON'S speech, delivered in the Senate, on the presentation of his great measure of a "railway to the Pacific." With our friend Loughborough, we must, however, be permitted to doubt whether any considerable portion of the commerce of Europe with Asia, will be carried across our continent, as supposed by Senator Benton; but, be this as it may, the objects to be obtained by constructing the road, are sufficient without this trade, to induce the American people to enter upon the enterprise, should it cost many times the amount of money which will be required to construct it. We take occasion, also, to remark that the principal difficulty apprehended hy the honorable Senator—the snow and ice of the mountains—may be easily remedied by constructing the rails on piles, as suggested by Mr. Loughborough.

If, in reading the following remarks, there be any whose hearts do not glow with gratitude in view of the glorious destiny that awaits us as a nation, such must be dead to every sense of patriotism, and unworthy of the name of American citizens.

Mr. Benton said:

The means of the United States for this construction are ample. The length of the road appals some persons. Sir, it is a case in which the length, in reference to the means, makes no difference. It is not a case in which money is to be raised from another source in order to defray the expenses of the road. It makes itself. The whole country belongs to the United States, saving the mere extinction of the Indian title. It is all public land—a great belt of public land equal to the whole length of the Mississippi river, covering seventeen degrees on the Pacific coast, and as much in the valley of the Mississippi. Out of that the bill proposes that a per centum shall be taken from all the sales, and that per centum shall be applied to the construction of the road. Now, sir, in this point of view, the whole country being public land from the frontier of Missouri to the Pacific Ocean, every mile provides for itself. The distance of five or six hundred miles, right and left, is public land, and this is put into contribution for the construction of the road. All the sales are to contribute. It is, therefore, no more to make a long road than a short one.

I propose, Mr, President, in view of the magnitude of this work—in view of our dominion over the public land, throughout its whole extent—in view of the uses to which this road may be applied, not only in our day, but by our children, to have it projected at once, and upon a scale commensurate to its future destiny, be that as great as it may.

The proposition in the bill is, that there be reserved a breadth of one mile frontier of Missouri to the Pacific ocean—a breadth of one entire mile—for the purpose of laying down, at once, one track, one

road, reserving enough for as many tracks, and independent of each other, as shall be necessary in all time; for all the varieties of roads that are now in use, or which may come into use in the unnumbered generations which the road is to benefit. I begin with railway, as far as practical and advantageous, leaving it to practical men to say where it is not. The difficulty which presents itself to my mind is the deep snow, which continues for so many months in the year, and lies so deep among the Rocky mountains. It is for practical men to say where the road can go there, or whether it will be necessary to find some other conveyance—the sleigh, for example—for that region in the time of the snows.

I propose to reserve ground for all sorts of roads—railway—plank—macadamized—more than that—room for a track by magnetic power—according to the idea stated, I believe, by Professor Henry, and, to me, plausibly pursued by Professor Page, of the Patent Office, if that idea ripens into practicability—and who can undertake to say that any idea will not become practicable in the present age? But, Mr. President, the bill contains another provision, that there shall be a margin reserved out of this breadth, of a mile, for a plain old English road; such as we have been accustomed to all our lives—a road in which the farmer, in his wagon or carriage, on horse, or on foot, may travel without fear, and without tax—with none to run over him, or make him jump out of the way. I look forward to the time when this whole continent is to be settled from one end to the other—when there are to be towns and villages upon it—when neighbors will want a convenient road. They may there find a space for them, in which they shall not give way to the cars or anything else—a road not to be interfered with.

The leading idea, then, is, that we reserve a breadth of land upon which we may lay down different tracks of road, independent of each other, to be kept unconnected with each other; to be adapted to the different means of conveyance; and to be reserved for all time to come. It is a wonderful circumstance in the history of the world that there should be a nation whose domain is so extensive that she is able to lay down as she chooses, by law, a road across a continent, the whole distance under one flag and one law. It is a wonderful contingency happened to us, and one which we should avail ourselves of. A part of this plan, Mr. President, is, that there should be military stations along the road, for its protection and support. It would be in vain to have a road without it. We want protection and we want support. Settlers will immediately establish themselves about every one of these stations, and will furnish the means of support to them all. Then, Mr. President, the wires can be stretched. As soon as this route is established, and this protection given, the wires can be stretched upon the whole route. Then, standing upon the shores of the Atlantic, you shall hold converse with him who stands upon the shores of the Pacific ocean. You shall talk to one another three thousand miles distant.

Nothing, Mr. President, is more essential than roads. It is an old theme, sir; but it will bear the suggestion that no civilized people can live without roads, and that it is the indispensable duty of every nation

which has acquired any new possessions, to open communication with it. We know that the Romans—from whom we borrow so many of our ideas, useful or grand—never considered a conquered territory added to the republic or the empire, until it was perforated by a road. There was no annexation, in their idea, until there was communication. The idea was well founded, sir, and one which we can practically carry out. Large and grand as our project of roads seems—from the Mississippi to the Pacific, and a mile in width reserved for many tracks—it is almost insignificant, compared to the roads of the Roman empire. Her territory was not greater than ours—not so compact—her population not so homeogeneous as ours, nor at the greatest as great as ours will be in the lifetime of the child now born; and yet her roads far transcended in length and number anything that we now propose. Here is what Gibbon says. After enumerating the four thousand cities belonging to the Roman empire, in Europe, Asia, and Africa, he goes on to say:

All these cities were connected with each other, and with the capital, by the public highways, which, issuing from the Forum of Rome, traversed Italy, pervaded the provinces, and were terminated only by the frontiers of the empire. If we carefully trace the distance from the wall of Antoninus to Rome, and from thence to Jerusalem, it will be found that the great chain of communication, from the northwest to the southeast point of the empire, was drawn out to the length of four thousand and eighty Roman miles. The public roads were accurately divided by mile-stones, and ran in a direct line from one city to another, with very little respect for the obstacles either of nature or private property. Mountains were perforated, and bold arches thrown over the broadest and most rapid streams. The middle part of the road was raised into a terrace which commanded the adjacent country, consisted of several strata of sand, gravel and cement, and was paved with large stones, or in some places near the capital, with granite. Such was the solid construction of the Roman highways, whose firmness has not entirely yielded to the effort of fifteen centuries. They united the subjects of the most distant provinces by an easy and familiar intercourse; but their primary object had been to facilitate the marches of the legions; nor was any country considered as subdued, till it had been rendered, in all its parts, pervious to the arms and authority of the conqueror. The advantage of receiving the earliest intelligence, and conveying their orders with celerity, induced the Emperors to establish throughout their extensive dominions the regular institution of posts. Houses were everywhere erected at the distance of only five or six miles; each of them was constantly provided with forty horses, and by the help of these relays it was easy to travel a hundred miles in a day along the Roman roads. The use of the lots was allowed to those who claimed it by an imperial mandate; but, though originally intended for the public service, it was sometimes indulged to the business of private citizens.

Such was the extent and solidity of the Roman roads—a single line of road above 4,000 Roman, and equal to 3,740 English miles—and the 4,000 cities of the empire all connected with roads of equal solidity besides. The road which we propose is only half the length

of one chain of theirs. I mention them for their magnificence—their grandeur—and as presenting an example worthy of imitation. The road I propose is necessary to us, and now. We want it now. The state of our possessions on the Pacific demands it. The time to begin has arrived. All the necessary information is on hand. The means are ready. The title to Oregon is settled, and a government established there, and population is growing up. California is acquired; people are there: and a government must follow. We have a fleet on that coast—troops there, and going. Streams of population are concentrating there. Since the discovery of the New World by Columbus there has not been such an unsettling of the foundations of society. Not merely individuals and companies, but communities and nations are in commotion, all bound to the setting sun—to the gilded horizon of western America. For the want of an American road, they seek foreign routes, far round, by sea and land, to reach by an immense circuit what is a part of their own land. Until we can get a road of our own, we must use and support a foreign route; but that is a temporary resource, demanded by the exigency of the times, and until we can get our own ready. Never did so great an object present itself to the acceptance of a nation. We own the country from sea to sea—from the Atlantic to the Pacific—and upon a breadth equal to the length of the Mississippi—and embraciug the whole temperate zone. Three thousand miles across, and half that breadth, is the magnificent parallelogram of our domain. We can run a national central road, through and through, the whole distance, under our flag and under our laws. Military reasons require us to make it: for troops and munitions must go there. Political reasons require us to make it: it will be a chain of union between the Atlantic and Mississippi States. Commercial reasons demand it from us: and here I touch a boundless field, dazzling and bewildering the imagination from its vastness and importance. The trade of the Pacific Ocean, of the western coast of North America, and of eastern Asia, will all take its track; and not only for ourselves, but for posterity. That trade of India which has been shifting its channels from the time of the Phœnicians to the present, is destined to shift once more, and to realize the grand idea of Columbus. The American road to India will also become the European track to that region. The European merchant, as well as the American, will fly across our continent on a straight line to China. The rich commerce of Asia will flow through our centre. And where has that commerce ever flowed without carrying wealth and dominion with it? Look at its ancient channels, and the cities which it raised into kingdoms, and the populations which upon its treasures became resplendent in science, learning and the arts. Tyre, Sidon, Balbec, Palmyra, Alexandria, among its ancient emporiums, attest the power of this commerce to enrich, to aggrandize, and to enlighten nations. Constantinople, in the middle ages, and in the time of the crusades, was the wonder of western Europe; and all, because she was then a thoroughfare of Asiatic commerce. Genoa and Venice, mere cities, in later time, became the match of kingdoms, and the envy of the kings, from the mere divided streams of this trade of which they became the thoroughfare.

Lisbon had her great day, and Portugal her pre-eminence during the little while that the discovery of the Cape of Good Hope put her in communication with the East. Amsterdam, the city of a little territory rescued from the sea, and the seven United Provinces, not equal in extent to one of our lesser States, became great in arms, in letters, in wealth, and in power; and all upon the East India trade. And London, what makes her the commercial mistress of the world—what makes an island no larger than one of our first class States—the mistress of possessions in the four quarters of the globe—a match for half of Europe, and dominant in Asia? What makes all this, or contributes most to make it, but this same Asiatic trade? In no instance has it failed to carry the nation or the people which possessed it, to the highest pinnacle of wealth and power, and with it, the highest attainments of letters, arts and success. And so will it continue to be. An American road to India, through the heart of our country will revive upon its line all the wonders of which we have read—and eclipse them. The western wilderness, from the Pacific to the Mississippi will start into life under its touch. A long line of cities will grow up. Existing cities will take a new start. The state of the world calls for a new road to India, and it is our destiny to give it—the last and greatest. Let us act up to the greatness of the occasion, and show ourselves worthy of the extraordinary circumstances in which we are placed, by securing, while we can, an American road to India—central and national—for ourselves and our posterity—now, and hereafter, for thousands of years to come.

I now ask leave to introduce the bill.

Leave having been granted, Mr. Benton introduced his bill; which was read twice, and referred to the Committee on Military Affairs.

It is as follows:

A Bill to provide for the location and construction of a central national road from the Pacific ocean to the Mississippi river, with a branch of said road to the Columbia river.

Be it enacted, &c., That seventy-five per centum of the proceeds of the public lands in Oregon and California, and fifty per centum of the amount of the sales of all other public lands in the United States, shall be, and the same hereby are, set apart and pledged to defray the expenses of locating and constructing a central national road from the Pacific ocean to the Mississippi river, with a branch of said road to the Columbia river.

Sec. 2. *And be it further enacted*, That the said central national road shall commence on the Bay of San Francisco, at a suitable point to connect with the ocean navigation of the Pacific, and terminate at St. Louis, in the State of Missouri. And the said branch road shall commence on the tide-water region of the Columbia river, to connect with ocean navigation at that point, and shall intersect the central national road at some suitable point west of the Rocky mountains.

Sec. 3. *And be it further enacted*, That the said central and branch roads shall be iron railways where practicable and advantageous, and shall be macadamized, or otherwise constructed, where not so practicable and advantageous; and a breadth of one mile wide from the frontier of the State of Missouri to the Bay of San Francisco, shall be, and the same hereby is, reserved and appropriated forever for the track of said central road, and for the tracks of such other roads (railway or others,) as may hereafter be authorised by act of Congress; and a breadth

of one thousand feet shall be, and the same hereby is, reserved for the branch road to the tide-water region of the Columbia.

SEC. 4. *And be it further enacted*, That the President of the United States be, and he hereby is, authorized and requested to cause all the information in the possession or power of the government, necessary to show the comparative advantages and disadvantages of different routes for said central and branch routes, to be laid before Congress for its decision, with topographical and profile maps to illustrate the same; and to cause further explorations to be made, if necessary; and the sum of thirty thousand dollars, out of any moneys in the treasury not otherwise appropriated, be, and the same hereby is, appropriated to enable the President to carry the objects of this section into effect.

SEC. 5. *And be it further enacted*, That as soon as the routes for said central and branch road, or either of them, shall be selected, the location or construction thereof shall be commenced under the direction of the President of the United States, and continued till finished, by virtue of appropriations to be made by Congress out of the fund created and set apart by this act for that purpose.

SEC. 6. *And be it further enacted*, That military stations shall be established on the line of the said central and branch roads, for their protection and support; and settlements shall be encouraged at such stations by making donations of land to actual settlers.

SEC. 7. *And be it further enacted*, That so soon as said railway, or any sufficient part thereof, shall be completed and fit for use, the use thereof shall be granted for a limited time to such individuals or companies as shall, by contract with the government of the United States, agree to transport persons, mails, munitions of war, and freight of all kinds, public and private, in vehicles furnished by themselves over the same, at such reasonable rates as shall be agreed upon: *Provided*, That if other roads shall hereafter be constructed on the ground reserved for roads by this act, the same company or persons shall not be allowed to have the contract for transportation, or any interest in more than one road at the same time. *And provided, further*, That a margin of said reserved ground, both over the said central and branch road, of at least one hundred feet wide, shall be forever reserved for a common road for wheel carriages, horse and foot travelers, free from toll or charge.

SEC. 8. *And be it further enacted*, That the sum of one hundred thousand dollars be, and the same is hereby, appropriated to enable the President to treat with the Indian tribes along the line of said road, when the route thereof shall be resolved upon, for so much territory as shall be necessary for the purposes of this act.

COMMERCIAL STATISTICS.

STATISTICAL ASSOCIATIONS.

THERE is perhaps no other country in which an organized system of collecting and preserving statistics, is of so much importance as in the Valley of the Mississippi; for, owing to the annual extension of the area of settlement and civilization in the west—the rapid increase of population—the growth of towns and cities, and the progress of agriculture, manufactures, commerce, and navigation—the statistics of one year are far from indicating the true state of things for the year immediately following. The present condition of Europe affords another strong argument to incite the people of this country to the collection and publication of such facts as are calculated to make the resources of the Valley of the Mississippi known to foreign capitalists. The spirit of emigration is bringing to the United States a vast amount of labor, and it is highly important that a corresponding

amount of capital should come with this labor, to put it in operation, and afford for it profitable employment. Capitalists are timid and cautious in their movements, and rarely go in search of objects of investment; and hence whenever foreign capitalists come to the United States they stop in the Atlantic cities, and only serve to increase the money power of the east, and thereby weaken the relative commercial power of the west. Could foreign capitalists be made acquainted with the extent and variety of the resources of this Valley, it cannot be doubted but that many would be induced to come here, more especially at the present time when so large a number of the laborers of their own country are settling in this region.

Impressed with the importance of this subject, we called the attention of our agricultural readers to it about a year ago, and endeavored by the use of argument to stir them up to the formation of agricultural associations, which, among other objects should combine that of collecting all useful facts relating to their several districts; but we regret that from that day to the present time, we have not been advised of the formation of a single agricultural society in Missouri. We have also written many letters addressed to individuals, requesting them to furnish us with the general statistics of their towns and neighborhoods, embracing the subjects of commerce, manufactures, mining, horticulture, &c. A few only of these individuals have furnished us with the desired information; others have made excuses for not doing so, and a large portion have not even acknowledged the receipt of our communications. And although we feel some degree of humiliation arising from the little impression that we have been able to make upon our readers, we have however resolved to address the business portion of the community of St. Louis, and to urge upon them the consideration of forming a statistical society in this city. It will require no argument to convince the merchants, at least, of the importance of correct information respecting the agriculture and manufactures, as well as of the commerce of the country; and we must be allowed to say that one who is ignorant on these subjects, is not entitled to the honorable appellation of *merchant*, nor is he worthy to be trusted as such; he may be a sordid huckster, and thrive by the art of 'jewing,' but it is an abuse of language to call him a merchant. While it may be safely affirmed that a very large portion of those who aim to act upon the liberal and enlarged principles that constitute the merchant, fail from a want of correct knowledge of the facts which relate to their business. Our experience has taught us that commercial statistics should, in general, be received with great caution. Editors of commercial papers cannot attend in person to the collection of statistics. Nor can they always attend to the details of comparing and arranging them; and relying, as they must, on the fidelity of agents, they are continually in danger of falling into errors. An occurrence which has recently happened, in our own case, will prove how little reliance is to be placed in the published statistics of St. Louis. We have hitherto relied mainly upon the papers of the city for our commercial facts; and supposing that they were sufficiently accurate for all practical purposes, and knowing of no means of testing their truth, we have scrutinized them less, perhaps, than it was our duty to have done.

Recently, however, we were kindly admonished of our errors, by one of the leading journals of the city, which intimated that we had collected our statistics

from a wrong source. Being anxious to discover wherein we had erred, we undertook to compare our tables with the annual statement of the commerce of St. Louis, for the year 1848, as published by our neighbors who had given us this friendly intimation, when, to our deep mortification, we discovered many important discrepancies, and instantly resolved to enter upon the labor of correction, let it cost what it might; for we had no desire either to conceal or defend our mistakes. At a loss where to commence our search for the truth, it ocurred to us to compare this annual statement of our cotemporaries with the semi-weekly reports of the St. Louis market, which were to be found in the files of the same paper for the year 1848; and selecting, at random, the prices of hemp for the months of July and August, we turned to their file, and were not greatly surprised to find that the discrepetancy was about as great between their annual statement and semi-weekly report, as between them and our own tables. In the annual statement of the prices of hemp for the month of July, 1848, the article is set down as ranging from $80 to $83 per ton. We examined carefully the actual sales in seven semi-weekly reports made during that month, and found that the prices there ranged from $75 to $101, and eight bales of hackled at $102 50 per ton; the sales amounted to 4,360 bales—and 2,629 of these sold above the maximum of $83, 1,138 bales above $90 per ton, and 638 bales at and above $100 per ton, and only 851 bales sold under $83 per ton; 128 were sold at private terms. We compared, likewise, the prices of hemp for the month of August; and, although the discrepancy is not quite so great as in July, yet it will be seen, from the following facts, that the annual statement differs widely from the semi-weekly reports of the market. The price of hemp is stated in the annual report, for this month, as ranging from $95 to $98 per ton. We find, by examining six semi-weekly reports in August, the sale of 3,396 bales: of these, 131 sold at $98; 1,858 bales at $98 to $100; 493 bales at $95 to $100; and 838 bales at $100 per ton. We then examined the annual statement of the price of corn for the month of August, 1848, and found this article reported as ranging from 38 to 40 cents per bushel; and, upon turning to the semi-weekly reports, we discovered that the highest sale noticed in seven semi-weekly reports is set down at 33¼ cents, the prices ranging from 24 to 33¼ cents—showing a difference of at least 25 per cent. between the annual statement and the semi-weekly reports. We compared, also, the prices of tobacco for August; but, as the annual statement gives the price of prime shipping qualities only, without noticing the lower and higher qualities, we are compelled to leave the readers of this annual statement to discover, as they best can, what portion of the crop of Missouri is included within the denomination of "prime shipping qualities;" as also the prices of the inferior qualities—which, we imagine, constitute a large portion of the tobacco crop of the State.

We proceeded no farther with our comparison of tables; for, utterly disparing of correcting our own, we felt no inclination to expose the errors of others.

We have simply noticed these facts, in connection with the subject of a statistical association, as evidence of the importance of such an institution. We are convinced that individual enterprise is totally inadequate to the task of collecting and arranging the statistics of our city, so as to make them useful to the man of business—to the legislator, or historian; and, therefore, we desire to see some of our influential citizens come forward, with a plan calculated to remedy the evil of which we complain.

COINAGE OF THE UNITED STATES.

In connection with the leading article of the present number, we have appropriated a large space to the coinage of the United States. The tables, with the remarks which precede them, are taken from the Merchants' Magazine, for February, 1849, and the source from which they were obtained by the editor of that Journal, entitles them to the fullest degree of credit.—[EDITORS.

Prior to the year 1835, there existed but one institution, the parent Mint, which commenced operations in 1793, and is established in the city of Philadelphia. It occupies a spacious and elegant edifice of white marble fronting upon Chesnut street, and provided with all the delicate machinery and other appliances required for assaying, melting, refining, and the proper coinage of the precious metals. During that year three branches of the parent Mint were created by act of Congress. Two of these were located in the centre of the gold mining region, the one in the town of Charlotte, North Carolina, and the other at Dahlonega, within the State of Georgia, both being exclusively confined to the coinage of gold. The other was established in New Orleans for the coinage of gold and silver. During the year 1838 those branches went into operation, their coinage being uniform with that of the parent Mint, and is tested at this institution. Each of the branches is under the management of superintendents, whose official duties pass under the general supervision of the parent establishment in Philadelphia. We subjoin a corrected statement of the amount of coinage at the Mint of the United States, in the several denominations of coin, from the commencement of its operations, until the 31st of December, 1847, inclusive:*

Amount of Coinage at the Mint of the United States, in the several denominations of coin, from the commencement of its operations until December 31, 1847, inclusive.

	GOLD COINAGE.				
Years.	Eagles. Pieces.	Half Eagles. Pieces.	Quarter eagles. Pieces.	Total gold coinage. Number. Pieces.	Value. Dolls. Cents.
1793, 1794, 1795,	2,795	8,707		11,502	71,485 00
1796,	6,934	6,196	963	14,093	102,727 50
1797,	8,323	3,609	859	12,791	103,422 50
1798,	7,974	24,867	614	33,455	205,610 00
1799,	17,583	7,451	480	25,414	213,285 00
1800,	25,965	11,622		37,587	317,760 00
1801,	29,254	26,006		55,260	422,570 00
1802,	15,090	53,176	2,612	70,878	423,310 00

*For this corrected table we are indebted to the politeness of R. M. Patterson, Esq., the son of the able and efficient Director of the Institution, and to the Manual of Coinage, issued by the Assayers of the Mint of the United States.

GOLD COINAGE—CONTINUED.

Years.	Eagles. Pieces.	Half Eagles. Pieces.	Quarter eagles. Pieces.	Total gold coinage. Number. Pieces.	Value. Dolls.	Cents.
1803,	8,979	33,506	423	42,908	258,377	50
1804,	9,795	30,475	3,327	43,597	258,642	50
1805,		33,183	1,781	34,964	170,367	50
1806,		64,093	1,616	65,709	324,505	00
1807,		84,093	6,812	90,905	437,495	00
1808,		55,578	2,710	58,288	284,665	00
1809,		33,875		33,875	169,375	00
1810,		100,287		100,287	501,435	00
1811,		99,581		99,581	497,905	00
1812,		58,087		58,087	290,485	09
1813,		95,428		95,428	477,140	00
1814,		15,454		15,454	77,270	00
1815,		635		635	3,175	00
1816,						
1817,						
1818,		48,588		48,588	242,940	00
1819,		51,723		51,723	258,615	00
1820,		263,806		263,806	1319,030	00
1821,		34,641	6,448	41,089	189,325	00
1822,		17,796		17,796	88,980	00
1823,		14,485		14,485	72,425	00
1824,		17,340	2,600	19,940	93,200	00
1825,		29,060	4,434	33,494	156,385	00
1826,		1[illegible],069	760	18,829	92,245	00
1827,		24,913	2,800	27,713	131,565	00
1828,		28,029		38,029	140,145	00
1829,		57,442	3,403	60,845	295,717	50
1830,		126,251	4,540	130,891	643,105	00
1831,		140,594	4,520	145,114	714,270	00
1832,		157,487	4,400	161,887	798,435	00
1833,		193,630	4,160	197,790	978,550	00
1834,		732,169	117,370	849,539	3,954,270	00
1835,		371,534	131,402	502,939	2,186,175	00
1836,		553,147	547,986	1,101,133	4,135,700	00
1837,		207,121	45,080	252,201	1,148,305	00
1838,	7,200	286,588	47,030	340,818	1,622,515	00
1839,	28,248	118,143	27,021	183,412	1,040,747	50
1840,	47,338	137,382	18,859	203,579	1,207,437	50
1841,	63,131	15,883		78,964	710,475	00
1842,	81,507	27,578	2,823	111,908	960,017	00
1843,	75,462	611,205	100,546	787,213	4,062,010	00
1844,	6,361	340,370	6,784	353,515	1,782,420	00
1845,	26,153	417,099	91,051	534,303	2,574,652	50
1846,	20,095	395,942	21,598	437,635	2,234,655	00
1847,	862,264	919,781	29,814	1,811,859	13,296,080	00
Total,	1,360,351	7,203,755	1,247,626	9,811,732	52,741,350	00

SILVER COINAGE.

Years.	Dollars. Pieces.	Hf dollars. Pieces.	Quarter dollars. Pieces.	Dimes. Pieces.	Hf dimes. Pieces.	Total silver coinage. Number. Pieces.	Value. Dlls.	Cts.
1793.... 1794.... 1795....	204791	323144	....	....	....	614351	370683	80
1796.....	72920	3918	5894	22135	10230	115097	79077	50
1797.....	7776	....	252	25261	44527	77816	12591	45
1798.....	327536	....	....	27550	....	355086	330291	00
1799.....	423515	....	....	....	....	423515	423515	00
1800.....	220920	....	....	21760	24000	266680	224296	00
1801.....	54454	30239	....	34610	33910	153293	74750	00
1802.....	41650	29890	....	10975	13010	95525	58343	00
1803.....	66064	31715	....	33940	37850	168669	87118	00
1804.....	19570	156519	6738	8265	....	191092	100349	50
1805.....	301	211722	121394	120789	15600	469817	149388	50
1806.....	....	839576	206124	....	....	1045700	471319	00
1807.....	....	1051576	220643	165000	....	1437219	597448	75
1808.....	....	1368600	....	....	....	1368600	684300	00
1809.....	....	1405810	....	44710	....	1450520	707376	00
1810.....	....	1276276	....	6355	....	1282631	638773	50
1811.....	....	1203644	....	65180	....	1268824	608340	00
1812.....	....	1628059	....	....	....	1628059	814029	50
1813.....	....	1241903	....	....	....	1241903	620951	50
1814.....	....	1039075	....	421500	....	1460575	561687	50
1815.....	....	....	69232	....	....	69232	17308	00
1816.....	....	47150	20003	....	....	67153	28575	75
1817.....	....	1215567	....	....	....	1215567	607783	50
1818.....	....	1960322	361174	....	....	2321496	1070454	50
1819.....	....	2208000	144000	....	....	2352000	1140000	00
1820.....	....	751122	127444	942587	....	1821153	501680	70
1821.....	....	1305797	216851	1186512	....	2709160	825762	45
1822.....	....	1558573	64080	100000	....	1723653	805806	50
1823.....	....	169420	17800	440000	....	2152000	895550	00
1824.....	....	3504954	....	....	....	3504954	1752477	00
1825.....	....	2943166	168000	510000	....	3621166	1564583	00
1826.....	....	4004180	....	....	....	4004180	2002090	00
1827.....	....	5493400	4000	1215000	....	6712400	2869200	00
1828.....	....	3075200	102000	125000	....	3302200	1575600	00
1829.....	....	3712156	....	770000	1230000	5712156	1994578	00
1830.....	....	4764800	....	510000	1240000	6514800	2495400	00
1831.....	....	5873660	398000	771350	1242700	8285710	3175600	00
1832.....	....	4797000	320000	522500	965000	6604500	2579000	00
1833.....	....	5206000	156000	485000	1370000	7217000	2759000	00
1834.....	....	6412004	286000	635000	1489000	8813004	3415002	00
1835.....	....	5352006	1953000	1410000	2760000	11474006	3443003	00
1836.....	1000	6546200	472000	1190000	1900000	10109200	3606100	00
1837.....	....	3629820	252400	1042000	2276000	7200220	2096010	00
1838.....	....	3546400	832000	1992500	2255000	8625500	2293000	00
1839.....	300	3334581	491146	1053115	1069150	5948272	1949136	00
1840.....	61005	1435008	188127	1358580	1344085	4386805	1028603	00
1841.....	173000	310000	120000	1622500	1150000	3375500	577750	00
1842.....	184618	2012764	88000	1887500	815000	4987882	1442500	00
1843.....	165100	3844000	645600	1370000	1165000	7189700	2443750	00
1844.....	20000	1766000	421200	72500	430000	2709700	1037050	00
1845.....	24500	589000	922000	1755000	1564000	4854500	803200	00
1846.....	110600	2210000	510000	31300	27000	2888900	1347580	00
1847.....	140750	1156000	734000	245000	1274000	3549750	990450	00
Total....	2320390	106101326	10644102	24250095	25822478	171138391	62748211	90

Total amount of copper coined at the Mint of the United States, from 1793 to 1847, inclusive, is $1,145,591 21. The quantity of copper coined, varies very much in different years; the largest quantity coined in any one year, say in 1838, was $63,702; in 1841, was coined only $15,973 62; in 1847, it again increased to $61,836 69.

TOTAL COINAGE OF THE UNITED STATES.

Years.	*Value.* Dolls. Cts.	*Years.*	*Value.* Dolls. Cts.
1793, 1794, 1795,	453,541 80	1822,	915,509 89
1796,	192,129 40	1823,	967,975 00
1797,	125,524 29	1824,	1,859,297 00
1798,	545,698 00	1825,	1,735,894 00
1799,	645,906 68	1826,	2,110,679 25
1800,	571,335 40	1827,	3,024,342 32
1801,	510,956 37	1828,	1,741,381 24
1802,	516,075 83	1829,	2,306,875 50
1803,	370,698 53	1830,	3,155,620 00
1804,	371,827 94	1831,	3,923,473 60
1805,	333,239 48	1832,	3,401,055 00
1806,	801,084 00	1833,	3,765,710 00
1807,	1,044,595 96	1834,	7,388,423 00
1808,	982,055 00	1835,	5,668,667 00
1809,	884,752 53	1836,	7,764,900 00
1810,	1,155,868 50	1837,	3,299,898 00
1811,	1,108,740 95	1838,	3,979,217 00
1812,	1,115,219 50	1839,	3,021,170 11
1813,	1,102,271 50	1840,	2,260,667 50
1814,	642,435 80	1841,	1,304,198 67
1815,	20,483 00	1842,	2,426,351 50
1816,	56,785 57	1843,	6,530,043 20
1817,	647,267 50	1844,	2,843,447 52
1818,	1,345,064 50	1845,	3,416,800 54
1819,	1,425,325 00	1846,	3,623,443 00
1820,	1,864,786 20	1847,	14,348,366 69
1821,	1,018,977 45	Total,	116,635,153 11

By an act of Congress of February, 1793, all foreign gold and silver coins, (except Spanish milled dollars, and parts of dollars,) which were received for moneys due to the United States, were required to be coined anew previous to their circulation; and under this act the amount received at the Philadelphia Mint, during the year 1847, was $9,829,404.

Since all value is regulated by the standard of gold and silver, it may be proper to exhibit a few general facts respecting their production in different parts of the globe. It appears that for three centuries the greater part of the gold and silver, which was used by civilized nations was drawn from America—Mexico and Peru yielding the largest amount of silver, and New Granada, Brazil, and Chili the largest amount of gold. The production of the precious metals in Mexico and South America, during the last thirty years, has decreased, in consequence, probably, of the revolutions which have convulsed those countries; while within that period the amount produced in the United States has been greatly increased. The quantity produced in Europe and Asia has been vastly augmented since the commencement of the present century. The largest supply of gold, exceeding in amount that which is furnished from all other parts of the globe, is obtained from the Russian dominions—the ranges of the Ural and Altain mountains containing vast depositories of the precious metals. The total

amount of the production of gold in America, from its discovery to January, 1846, is estimated at $6,810,290,000. Recent discoveries seem, moreover, to have developed extensive mines in the territory of California. By the official report of the Director of the Mint, it appears that the total amount of gold from the mines of the United States, which has been deposited for coinage in this institution, is $12,741,653. We subjoin the following statement of the annual amount of deposits of gold at the Mint of the United States and its branches, from mines in the United States, down to the present period:—

Statement of the annual amounts of Deposits of Gold, for coinage, at the Mint of the United States and its branches, from mines in the United States.

DEPOSITED AT THE UNITED STATES MINT.

Years.	Virginia.	North Carolina.	South Carolina.	Georgia.	Tenn.	Ala.	Various sources.	Total at the United States Mint.
1824,	....	$5000	....	....	....	....	....	$5000
1825,	....	17000	....	....	....	....	....	17000
1826,	....	20000	....	....	....	....	....	20000
1827,	....	21000	....	....	....	....	....	21000
1828,	....	46000	....	....	....	....	....	46000
1829,	2500	134000	3500	....	....	....	....	140000
1830,	24000	204000	26000	212000	....	....	....	466000
1831,	26000	294000	22000	176000	1000	....	1000	520000
1832,	34000	458000	45000	140000	1000	....	....	678000
1833,	104000	475000	66000	216000	7000	....	....	868000
1834,	62000	380000	38000	415000	3000	....	....	898000
1835,	60400	263500	42400	319900	100	....	12000	698500
1836,	62000	148100	55200	201400	300	....	....	467000
1837,	52100	116900	29400	83600	....	....	....	282000
1838,	55000	66000	13000	36000	1500	....	200	171700
1839,	57600	53500	6300	20300	300	500	....	138500
1840,	38995	36804	5319	91113	104	4431	....	176766
1841,	25736	76431	3440	139796	1212	1863	....	248478
1842,	42163	61629	223	150276	....	5579	13717	273587
1843,	48148	62873	5099	56619	2788	3786	415	180728
1844,	40595	194917	11856	30739	2240	12298	2377	295022
1845,	86783	365886	5386	17325	3202	6472	4328	489382
1846,	55538	286105	100641	13601	2642	7542	....	466069
1847,	67736	99491	1102	10547	2511	2022	....	183409
Total,	$945294	3886136	479866	2330246	28899	45492	34237	7750141

DEPOSITED AT THE BRANCH MINTS.

Years.	Branch mint at Charlotte, North Carolina.	Branch mint at Dahlonega, Georgia.	Branch mint at New Orleans.	Total at the branch mints.	Total deposits of U. States gold.
1838,	$127,000	$135,700	$700	$263,400	$435,100
1839,	126,836	113,035	6,869	246,740	385,240
1840,	124,726	121,858	3,835	249,419	526,185
1841,	129,847	161,974	1,818	293,639	542,117
1842,	174,508	323,372	5,630	503,510	777,097
1843,	272,064	570,080	22,573	864,717	1,045,445
1844,	167,348	479,794	25,036	672,178	967,200
1845,		498,632	20,313	518,945	1,008,337
1846,	196,381	455,149	21,758	673,288	1,139,357
1847,	344,054	352,366	9,256	705,676	889,085
Total,	$1,662,764	3,211,960	116,788	4,991,512	12,741,653

COINAGE AT THE BRITISH MINT.

The following table, exhibiting the coinage of the British Mint for eleven years, is credited by the Merchants' Magazine to the "Companion to the British Almanac for 1849," an authority which the editor says can be relied upon.

STATEMENT OF THE VALUE ARISING FROM THE COINAGE DURING THE ELEVEN YEARS FROM 1837 TO 1847.

Years.	TOTAL WEIGHT COINED IN EACH YEAR. Gold. lbs.	Silver. lbs.	Copper. tons. cwts.	TOTAL VALUE COINED IN EACH YEAR. Gold.	Silver.	Copper.
1837 - -	26,818	23,064	22 15	£1,253,071	£76,111	£5,096
1838 - -	61,110	60,960	7 00	2,855,364	101,168	1,568
1839 - -	10,793	120,980	32 00	504,303	399,235	7,168
1840 - -		65,580	14 00		216,414	3,136
1841 - -	8,100	29,144	33 00	378,472	96,175	7,392
1842 - -	127,919	58,440	8 00	5,977,015	204,732	1,792
1843 - -	141,420	83,720	68 10	6,607,850	276,276	15,344
1844 - -	76,275	189,900	36 17	3,563,949	626,670	8,207
1845 - -	90,842	196,260	31 00	4,244,506	647,658	6,944
1846 - -	92,775	196,560	29 00	4,334,697	559,548	6,496
1847 - -	110,400	38,100	40 00	5,158,440	125,730	4,960
Total, -	746,452	1,062,708	322 2	29,886,457	2,440,614	43,743
Tons, - -	373	531¼	322 2	Total value, - -		£38,275,486

The following table, showing the average yearly coinage of the principal governments in Europe and America, is taken from the Manual of Coins, a book published by Eckfeldt and Dubois, in 1842. We are not advised by the authors of the length of time embraced in this average; they say it is the average amount of gold and silver coined "of late years,"—a very indefinite expression. It will be observed that the amount set down for Great Britain is much less than the average of the eleven years, as shown by the foregoing table.

United States,	$4,300,000	Mexico,	$12,000,000
Great Britain and Ireland,	7,300,000	Bolivia,	1,500,000
France,	25,600,000	Peru,	3,000,000
Prussia,	1,800,000	Sweden,	690,000
Austria,	6,000,000	Denmark,	128,000
Spain,	400,000	Colombia,	2,000,000
British East Indies,	13,300,000	Brazil,	60,000
Saxony,	340,000		
		Total,	$74,098,000

BRITISH COIN AND BULLION STATISTICS.

Amongst the British Parliamentary returns, one relating to the export of bullion from the United Kingdom is very interesting. From this document, prepared by the Inspector General of imports and exports at the custom house, the following appears to have been the aggregate exports of coin and bullion from the United Kingdom for the years undermentioned:

Years.	GOLD. British. Oz.	Foreign. Oz.	Total. Oz.	SILVER. British. Oz.	Foreign. Oz.	Total. Oz.
1837,	166,485	34,996	201,481	285,920	13,354,084	13,640,004
1838,	375,548	105,883	481,431	464,918	12,894,904	13,359,822
1839,	251,696	405,626	657,322	779,257	13,021,226	13,800,483
1840,	57,700	316,871	374,571	471,869	15,496,408	15,968,277
1841,	17,952	13,683	31,635	502,243	14,812,180	15,354,423
1842,	107,829	9,363	117,192	149,832	13,832,956	13,982,788
1843,	564,509	28,296	592,805	553,586	11,809,408	12,362,994
1844,	23,979	40,209	64,188	325,721	13,403,310	13,729,031
1845,	11,928	46,643	58,371	429,458	14,439,174	15,368,632
1846,	99,529	38,878	138,305	237,209	9,380,419	9,617,628
1847,	1,005.651	236,896	1,242,637	952,955	14,320,824	15,273,779

Of the 1,242,637 ounces of gold, and 15,273,779 ounces of silver thus shown to have been exported in 1847, it appears that 1,005,651 of the gold, and 952,955 of the silver was in the coinage of this country, the remainder being foreign. While, however, nearly all the gold exported was British, the silver was almost exclusively foreign, the proportions being as follows:

	Gold—Oz.	*Silver—Oz.*
British coinage, - - -	1,005,651	952,955
Foreign coin and bullion, -	236,986	14,320,824
Total exported, -	1,242,637	15,273,779

On an analysis of the account, the total amount of specie exported appears to have been shipped to foreign countries in the following proportion:

	Gold—Oz.	Silver—Oz.		Gold—Oz.	Silver—Oz.
United States,	838,029		Brit. N. America,	6,569	201,108
France,	43,341	9,252,115	Brit. W. Indies,	7,293	560,872
Hanseatic towns,	33,954	3,312,233	Cuba,	74,879	
Holland,	23,112	630,429	Other countries,	63,596	465,491
Belgium,	47,400	430,086			
Portugal,	93,502	144,342	Total exports,	1,242,637	15,273,779
Cape of Good Hope,	10,662	277,093			

Valuing the above amounts at the mint price of gold and the average price of silver, it would appear that the bullion exported exceeded £10,000,000 sterling, of which sum about half was gold and the remainder silver. From this amount, however, in order to ascertain the nett sum exported, the value of the specie imported must be deducted, but the custom house returns do not afford any information on the point. The Bank of England returns show that the highest amount of gold and silver held during the year 1847, by that establishment, was £14,951,575 on the 2d Jannary; and the lowest amount £8,312,-691 on the 23d October; the difference being £6,638,881. This may afford sufficiently correct data to estimate the actual amount of specie exported over the amount received.

Increase of Gold and its effects on Values.—The Liverpool Journal says that the annual addition to the British stock of gold, made by mines is about £12,000,000, of which Russia and South America con-

tribute each £5,000,000. The Russian mines have been worked about twelve years, and have enlarged our stock of gold by £60,000,000, without having produced the least effect in price. The effect of the discovery of gold in California, it thinks, will be to close many of the South American works, and this may extend even to Russia, so that the average aggregate supply will be less than is generally supposed, and as the stock in existence is estimated at £800,000,000, the addition of even £26,000,000 annually, could not greatly interfere with its value.—[*Cincinnati Gazette.*

STATE OF THE BANK OF THE STATE OF MISSOURI, ON THE 31ST OF OCTOBER, 1848.

RESOURCES.

Branch at Fayette, for capital, -	$120,058 84	
" Palmyra, " -	120,058 84	
" Jackson, " -	120,058 84	
" Springfield, " -	120,058 84	
" Lexington, " -	120,058 84	
		$600,294 24
Bills discounted, - - - - - -		855,010 82
Exchanges matured, - - - - - -		295,950 29
Exchanges maturing, - - - - - -		276,738 70
Real Estate, - - - - - - -		59,318 29
State of Missouri, (for interest paid,) - - -		10,206 89
Loan to State of Missouri, (to pay volunteers,) -		4,276 93
Bills receivable, (real estate sold,) - - -		51,219 66
Suspended debt, - - - - - -		102,965 25
Expense account, - - - - - -		5,297 55
Protest account, - - - - - -		24 42
Due from Banks, - - - - - -		25,664 96
Certificates Banks of Illinois, - - - -		192,013 33
Warrants on State Treasurer of Missouri, - -		4,753 35
Gold and silver coin on hand, - - - -		1,763,360 85
		$4,338,955 49

LIABILITIES.

Capital stock paid in:		
Owned by the State, - - -	$954,205 22	
Owned by individuals, - - -	253,962 37	
		$1,208,167 59
Due depositors, - - - - - -		1,433,341 24
Unclaimed dividends, - - - - -		1,804 52
Interest and exchange, - - - - -		132,906 70
Contingent fund, - - - - - -		122,959 96

Suspense account, - - - - - - -	17,222 20
Circulation, - - - - - - - -	1,278,900 00
Due to banks, - - - - - - -	143,653 28
	$4,338,955 49

H. SHURLDS, *Cashier.*

St. Louis, October 31st, 1848.

WESTERN TOWNS.

LEXINGTON, MISSOURI.

The Lexington Weekly Express, of January 9th, gives the following account of the improvements and business of that place in 1848:

The population of the city and its immediate suburbs, according to the census recently taken, is between 2,400 and 2,500. The population of Lafayette county is 10,979. That of Ray county, bounding Lafayette on the north, 9,886; Johnson, on the south, 6,435; Saline, on the east, 6,953, and Jackson, on the west, about 12,000. The city is in the heart, or centre, of the richest body of land in the State.

The improvements of last year we find, by count, to be as follows: One steam flouring mill, two pair of burrs, erected by H. Smith; one steam flour and grist mill, one pair of burrs, by W. A. Masterson; one steam saw mill, by G. Wood & Co., now owned by T. Hinkle & Co.; one steam rope walk, by C. M'Grew, 430 by 30 feet, engine fifteen horse power, runs twenty-one spindles, and gives employment to thirty hands—cost between $4,000 and $5,000; one steam distillery, by W. W. Waddell; twenty-one brick residences; seven frame residences; one three story brick business house; two brick shops; three brick churches, Episcopal, Cumberland Presbyterian, and 2d Christian Reformers; and numerous additions to former buildings, besides out houses, frame and log shops, &c. The whole number of tenements, stores and shops, now in Lexington, would count between four and five hundred.

During the last twelve months, from 1,000 to 1,200 tons of hemp were baled and shipped from this port; 4,500 coils of bale rope; 800 hogsheads of bacon; between 2,000 and 3,000 barrels of lard; 25,000 bushels of wheat; 8,000 barrels flour; 600 barrels whisky; and a variety of other descriptions of produce, such as dry hides, beeswax, flaxseed, hempseed, &c., the value of which was considerable.

Up to the 1st day of January instant, about 9,200 hogs were packed. Several hundred more will be packed as soon us the weather moderates. One house has packed 140 beeves for exportation. The beef business, we learn, will be carried on more extensively the next season.

The imports for 1848 amounted, in the aggregate, to $200,000.

One of the steam mills, (W. W. Waddell's,) ground 55,000 bushels of wheat during the year, and the two steam distilleries consumed a large quantity of corn, (20 or 30,000 bushels.)

Five or six brick yards, during the season, made between 7 and 8,000,000 brick. Some of these are still in kiln.

In the professions, we find 18 physicians; 4 surgeon dentists; 19 attorneys at law. There are 7 churches, (Presbyterian, Cumberland Presbyterian, Episcopal, Methodist, Baptist, First and Second Christian Reformers,) each with its pastor.

In manufactories and mills we find at this time, 3 flouring mills, 3 rope walks, 1 carding machine, 2 steam distilleries, 4 steam saw mills, 1 brewery, and 1 tobacconist.

In the mechanical pursuits, 14 shops for joiners and carpenters, 10 for blacksmiths, 6 for wagon makers, 4 for coopers, 1 for iron and steel turners, 2 stone cutters, 2 for cabinet makers, 1 for plow makers, 8 for tailors, 2 for tinners and coppersmiths, 3 for silversmiths, 5 for saddlers and harness makers, 3 plasterers, 1 for fanning mill makers, 1 for carriage makers, 1 for machinists, 2 for turners, 1 for spinning wheels, 3 for shoemakers, 4 for bakers, 5 house and sign painters, 2 printing offices, 1 book bindery. There is about twenty licensed wagoners in the city.

In the mercantile line, we find 16 dry goods houses; 4 commission storage and produce houses; 1 family grocery, 4 apothecary stores, 2 tin and stove stores, 2 cabinet ware-rooms. There are fourteen or fifteen storage houses, for hemp and other produce. There were three or four large patent hemp presses in operation last season, and others will be put up the coming spring.

In institutions of learning, we have the Masonic College, now numbering 90 students; 4 schools for boys; the Ingleside Seminary for young ladies; Mrs. Greene's school for young ladies; Miss Blackwell's school for young ladies; Mrs. Wilson's school for young ladies, and Mr. Guthrie's seminary for young ladies.

The public buildings of Lexington, now consist of the old and new court houses, the clerk's office, the Branch Bank, the Masonic College, and the county jail. The new court house, when finished will cost the county about sixteen thousand dollars, and well may the people be proud of it. It is a splendid building, and will vie with any public edifice in Missouri, for convenience and comfort. It will be completed in the course of the coming spring.

The prospects of improvement, the present year, are good. There seems to be a great certainty that many are going to California; but enough will be left to carry forward the building up of our young city. The farmer will receive liberal prices for his produce, and thus the town will be benefitted. We know of several private residences now in contemplation, and there is a strong probability that a new and large hotel will be built; a city council room and fire engine house; a Catholic church, and the wings of the Masonic College.

Nothing can prevent the improvement of this place. Its location is in the midst of the richest section of the western world, the products of the soil being immense in quantity and highly valuable. We have the genuine 'gold mines' those that never fail to yield heavy products when properly worked.

GLASGOW—ITS LOCATION, BUSINESS, POPULATION, &c., &c.

Glasgow is located in the northwestern corner of Howard county, Missouri, oa the right bank of the Missouri river. The Chariton river empties into the Missouri just above the town, which stands on a high bluff, having one of the best boat landings, for high or low water, on the river.

The town was laid out in the fall of 1836—the first sale of lots having been made that fall. It now contains a population of near seven hundred, and is increasing and improving. We have several blocks of substantial two and three story brick buildings, and preparations are being made for further improvements next season.

There is in the place eleven stores, (dry goods, grocery and drug,) four stemmeries and tobacco factories, (and four others in the immediate neighborhood,) one pork packing establishment, a hemp manufactory in the course of erection, two hotels, two printing offices, and industrious and thrifty mechanics of almost every calling. Of public buildings, there are two churches, and a third being built, an Odd Fellows' Hall and Female Seminary, of large and handsome structure.

In a business point of view, Glasgow possesses advantages inferior to no place on the Missouri river. By reference to the map, it will be seen from its location, that it must command the trade of a large scope of country, which is densely populated, and noted for its fine quality of tobacco, hemp, and other agricultural products.

The shipping from this place last season, although below an average in the article of tobacco, in consequence of a short crop, will show that we do not over-rate its advantages. We have taken some pains to collect from our business men, the amount of their shipments of some of the most important articles, which we annex:

Tobacco, 3,194 hhds., 4,531 boxes, manufactured; hemp, 2,628 bales, part hackled; bale rope, 744 coils; wheat, 36,832 bushels; bacon, 548 casks; lard, 500 barrels; pork, 305 barrels; apples, 2,980 barrels, green and 3,000 bushels dried.

The foregoing does not include all the shipments from this place, manufacturers and growers, in many instances, being their own shippers—besides, as before remarked, leading articles are only mentioned; the shipments of hides, beeswax, tallow, feathers, hemp and flaxseed, beef, butter, &c. &c., swell the amount to a very considerable extent. Freights between this place and St. Louis, average from eighteen to twenty cents.

During the boating season, there are from two to four regular packets plying between this place and St. Louis, weekly; besides the advantages of boats for ports above. There were, during the past season, over five hundred landings at our wharf. In addition to this, we have tri-weekly lines of stages east, north and west, which afford ample facilities for communication with all points.

Until within the last year, the growth, (and in consequence the business of the place,) had been much retarded, in consequence of the original proprietors of the town not being able to make clear titles to lots. The removal of this difficulty has already had a salutary effect upon the improvement of the place, and a corresponding increase of business must follow. The products of the soil, which have hitherto

been exported for manufacture, it is believed, can be manufactured here as cheap as at any other point. In fact experience has proven this, as by reference to the shipments of last year compared with this, it will be seen that there is a falling off in strips, leaf tobacco and hemp, while there is an increase of those articles in a manufactured state—and capitalists see, and are already directing their attention accordingly. The field is ample, and no place offers better facilities or holds out more flattering inducements to persons wishing to embark in the hemp, flour, slaughtering, or distilling business.—[*Glasgow Times.*

ST. LOUIS STATISTICS.

POPULATION.—In the article on the History of St. Louis, published in our last number, we stated that the population might be fairly set down at 60,000. Since that article was written, the census taken during the past winter has been published by the Missouri Republican; from which it appears that the number of inhabitants within the city limits was 63,471. If to this the population in the suburbs be added, the number would probably reach 66,000.

STEAMBOATS.—We stated in the February number that there had been seven steamboats built in St. Louis during the year 1848. It appears by the following table taken from the Missouri Republican, that we understated the number and amount of tonnage.

STEAMBOATS BUILT IN ST. LOUIS IN 1848.

Mustang,	128 tons.	Fayaway,	102 tons.
Edward Bates,	300	Leonora,	125
Aleck Scott,	709	A. De Lamartine,	537
Highland Mary,	159	Plough Boy,	248
Iowa,	455		
Pekin,	108	Total,-	2,876

IMPORTANT INVENTIONS AND DISCOVERIES.

We have received a communication from H. ANCRUM, of Ashley, Pike county, Missouri, in which he says that he has invented three several improvements in reference to railroads:

1. A cheap mode of constructing railroads on a new plan, without iron or wood for sleepers; which, besides the great annual saving of expense in repairs, possesses other advantages, and is less liable to accidents than an iron railroad. He says if an average mile of a rail road in the United States should cost $43,650, or any less sum, he can make a mile of railroad as good for $3,000 per mile; and furthermore the material used possesses the advantage of being the best and cheapest that can be used as a preparation for laying down iron rails—so that any company making the experiment could lose nothing, though they should subsequently prefer the iron.

2. An invention calculated to prevent accidents on railroads.

3. An invention by which one-third of the fuel now used can be saved, by a self-feeding boiler and reservoir that keeps the boiler al-

ways full without being dependent on the engineer for its supply—the waste being replenished as fast as it occurs in the boiler, preventing thereby all danger of explosion.

Mr. ANCRUM has not intimated the nature of the material which he proposes to use in the construction of his road, nor the principle upon which it is to be operated. We are, therefore, unprepared to give any opinion respecting his invention. If he has been so fortunate as to have made such a discovery as above represented, it will be in his power not only to enrich himself, but to greatly benefit the community. If he will exhibit his plans to the examination of scientific and practical individuals there will be little difficulty we imagine in testing their utility; and we trust that he will not long withhold them from the public, if indeed they possess the merit which he supposes.

ANOTHER DISCOVERY.—The Rev. Mr. PEPPER, a Presbyterian clergyman, of Albany, New York, has invented, says the Springfield Republican, a compound of clay, called Argillo, which resembles in structure and appearance, the richest variegated agates. It is to be used for door knobs, pavements, table tops, and other ornamental articles.

It surpasses in brilliancy any known variety of marble, and it is equally cheap. The Hartford Whig speaks of it in the following terms: No one, who has not seen it, can form any idea of its beauty, and illimitable variety of color. It is so hard as to resist any scratch except of a crystal or diamond. Already Mr. Calhoun has introduced in the Senate, a resolution, which passed instantly, to the effect, that all the floors of the public offices in the capitol should be made of this beautiful material. $1,000,000 has been offered for the entire patent.

IMPORTANT INVENTION.—Mr. DAVID ISHAM, a machinist of Hartford, Conn., has recently invented a process by which cast iron can be converted, almost instantly, and with but slight expense and labor, into steel. Twenty minutes only are necessary to convert a ton of iron into steel of the best quality, a process ordinarily requiring from six to ten days. The inventor has been offered $12,000 for the patent right for the State of Pennsylvania alone. Articles manufactured from steel thus prepared, have been proved and found equal to those manufactured from the best English steel. If this invention is really what it purports to be, it will destroy one great branch of English labor, and add much to the wealth of this country.

ST. LOUIS, March 1, 1849.

My Dear Sir:—Owing to dimness of sight, and consequent depression of spirits, I am unable to concentrate my thoughts on any subject, and will have to beg of you to do me the favor to absolve me from the duty of this month's contribution. In the next number I hope again to pay my respects to the readers of the Western Journal. With high respect, yours,

M. TARVER, Esq. ALFRED S. WAUGH.

JOHN D. M'MURRAY. JAMES H. DORMAN.

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A portion of the work will be appropriated to Statistics, which will be collected and arranged with reference to the leading subjects contained in the respective numbers.

The development of the vast resources of the Valley of the Mississippi, and the improvement of the intellectual and moral condition of its inhabitants, will be constantly kept in view; and the leading article of each number will be devoted to the advancement of these objects. In attempting to illustrate and give direction to the economy connected with the leading pursuits of the country, the Editors have undertaken more than has been done or proposed by any other journal with which they are acquainted. And it is by their labors in this department mainly that they expect to make the work useful.

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